MONTANA BUSINESS QUARTERLY

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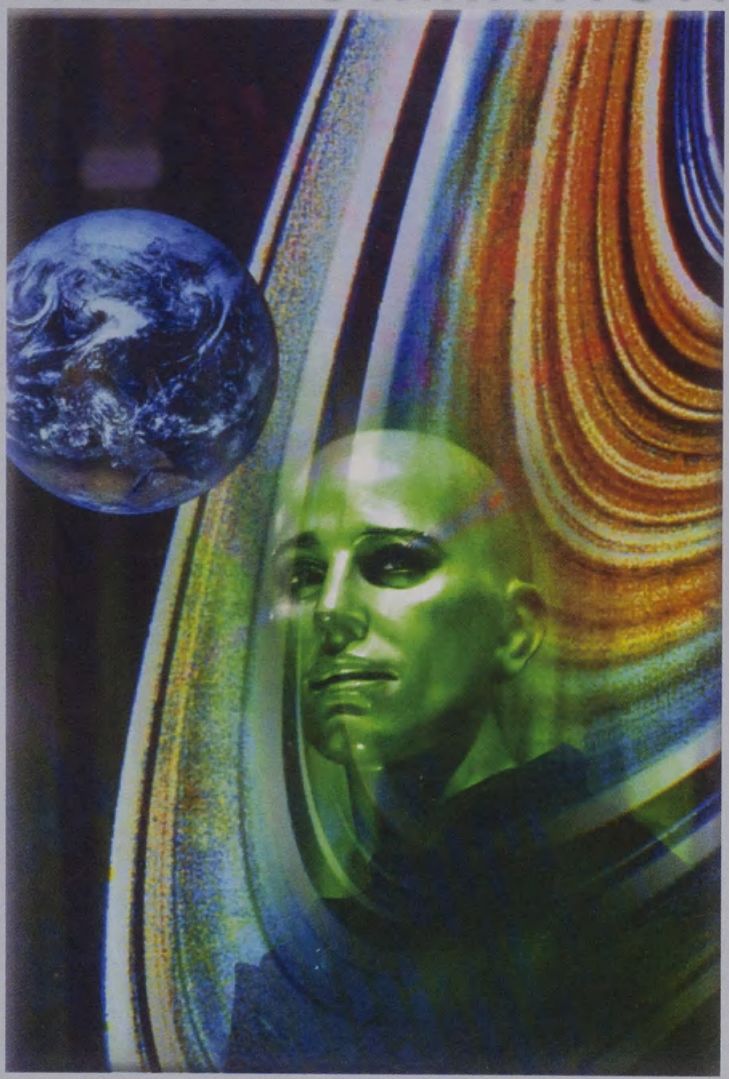
THE INFORMATION



ECONOMY

Inside:

Information Technology

Internet ~ Infrastructure ~ E-commerce

National, State, Local Forecasts

Industry Reports

Montana Business Quarterly

The Bureau of Business and Economic Research is the research and public service branch of The University of Montana's School of Business Administration.

The Bureau is involved in a wide variety of activities, including economic analysis and forecasting; health care, forest products, and manufacturing industry research; and survey research. The latest information about these topics is published regularly in the Bureau's award-winning magazine, the *Montana Business Quarterly*, which is partially supported by Wells Fargo.

The Bureau's Economics Montana forecasting system provides public and private decision makers with reliable forecasts and analysis. These state and local area forecasts are the focus of the annual series of Economic Outlook Seminars, cosponsored by First Interstate Bank, the Bureau, and respective Chambers of Commerce in Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula.

The Montana Poll, a quarterly public opinion poll, questions Montanans about their views on a variety of economic and social issues. The Bureau also conducts contract survey research and offers a random-digit dialing program for survey organizations in need of random telephone samples.

The Health Care Industry Research Program examines markets, trends, industry structure, costs, and other high visibility topics in this important Montana industry.

Research on the forest products industry has long been an important part of Bureau operations. While emphasis is placed on Montana's industry, the cooperative research with the U.S. Forest Service involves most of the Western states. A recently-formed research consortium including the Bureau, the Forest Products Department at the University of Idaho, and the Wood Materials and Engineering Laboratory at Washington State University addresses forest operations and utilization problems unique to the Inland Northwest.

The Bureau, in cooperation with Montana Business Connections, recently expanded the scope of its ongoing wood products manufacturing research to include all of Montana's manufacturing industries. Through this program, a comprehensive statewide electronic information system will be developed.

Bureau personnel continually respond to numerous requests for local, state, and national economic data. Don't hesitate to call on Bureau staff members if they can be of service to you.

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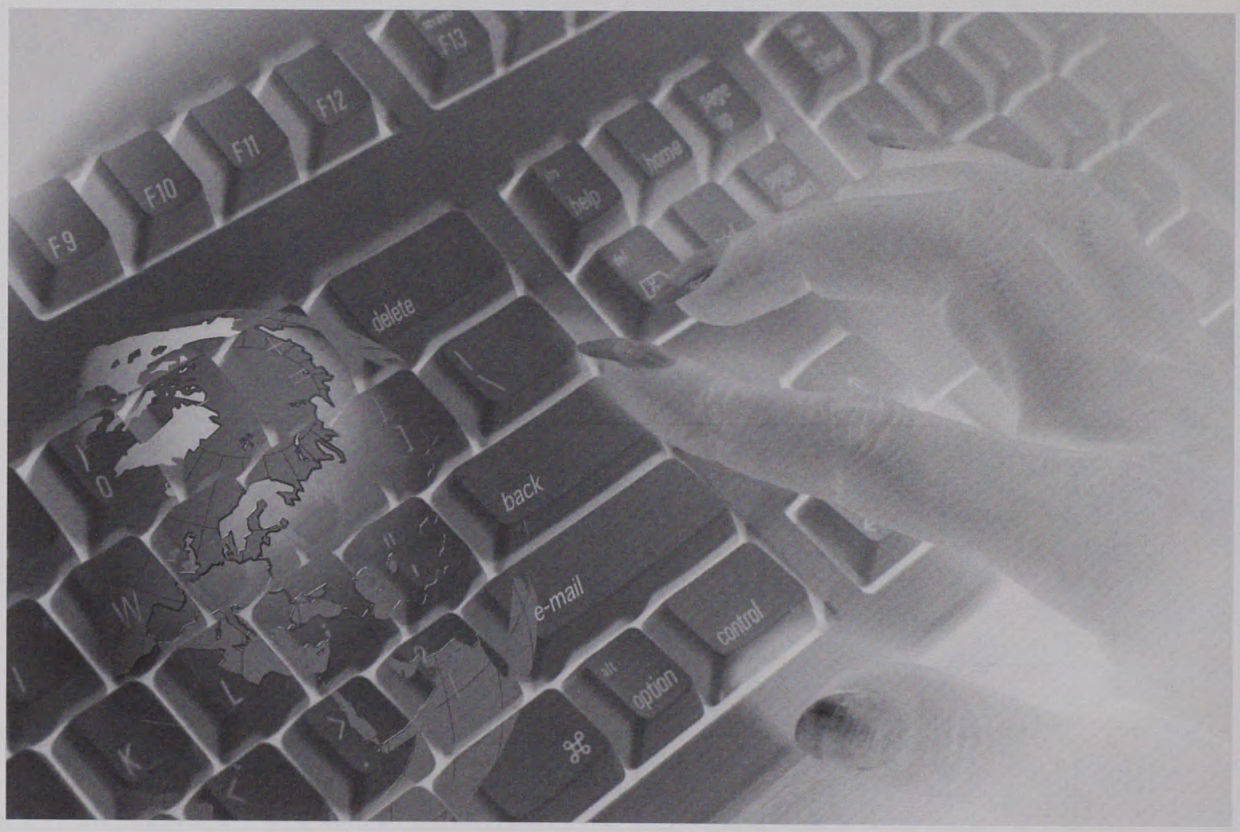


The Information Economy

by Stephen F. Seninger

"Everything that can be invented has been invented." So said the commissioner of the U.S. Office of Patents in 1899, referring to the wave of innovations and technological change in the 19th century.

Apparently, the commissioner was mistaken.

We are currently experiencing an intense innovation burst in information technology—a burst that includes computers, the Internet, e-commerce, and wireless communication. Information technology—IT—is everywhere you look.

Is this innovation burst a fundamental shift within the economy, or is it more of a short-lived blip that will become a flamboyant flameout? Does IT have the same importance as electricity or the internal combustion engine? Only time can answer these questions, but evidence suggests that information technology is playing a major role in the U.S. economy.

As shown in Figure 1, IT is more than just the Internet or e-commerce. The core elements are computers, software, and telecommunications—particularly wireless telecommunications.

E-commerce and E-management

The Internet component of IT—one that has occupied much of our attention—has brought us e-commerce and e-management.

E-commerce involves buying and selling on the Internet among businesses and consumers in the following combinations:

- **B2B (Business to business)** - outsourcing for materials, resources, and other business services,
- **B2C (Business to consumer)** - normal retailing activities, i.e. Amazon.com and Dell.com,
- **C2B (Consumer to business)** - consumers bidding for airline tickets on Priceline.com, leaving airlines to decide whether to accept offers, and
- **C2C (Consumer to consumer)** - consumer auctions such as Ebay.com.

E-commerce continues to grow for several reasons:

- the ease of price comparison,

Is this innovation burst a fundamental shift within the economy, or is it more of a short-lived blip that will become a flamboyant flameout? Does IT have the same importance as electricity or the internal combustion engine? Only time can answer these questions, but evidence suggests that information technology is playing a major role in the U.S. economy.

- greater choice, and
- electronic speed of transactions.

Electronic transactions erase the older distinction of geographic market areas, with the emergence of borderless markets and businesses that can locate wherever there is adequate Internet access.

IT and the Internet have changed the way businesses run. Based on information and communication systems, e-management interactions include:

- **employee-to-employee** - virtual teamwork through use of desktop video conferencing, application sharing, collaborative communications software, intra/extranets;
- **organization to employee** - telecommuters and contingency workers;
- **organization to outside organizations** - strategic alliances, especially in global markets with foreign competitors.

How Far Along are We in the IT Revolution?

Most experts estimate that e-commerce and e-management have realized 5 percent of their potential. In terms of the overall U.S. economy, IT currently represents slightly less than 5 percent of GDP, which means there is tremendous room for growth.

Information technology has reached all sectors of the national economy in the following ways:

- Consumer and business purchases via Internet and e-commerce are at low to zero marginal costs.

Figure 1
Information Technology

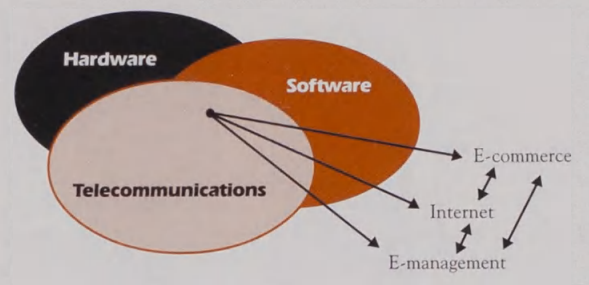
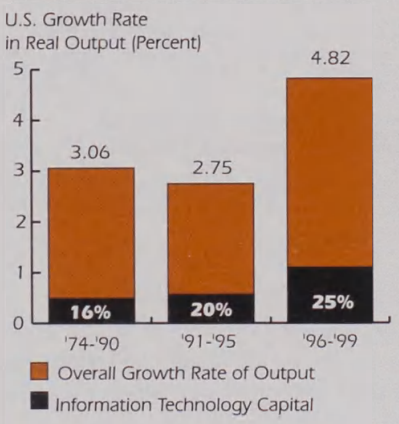
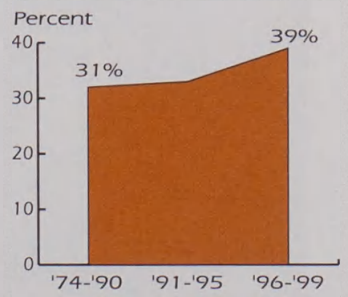


Figure 2
Contribution of Information Technology Capital to the Growth of Real Output, 1974 - 1999



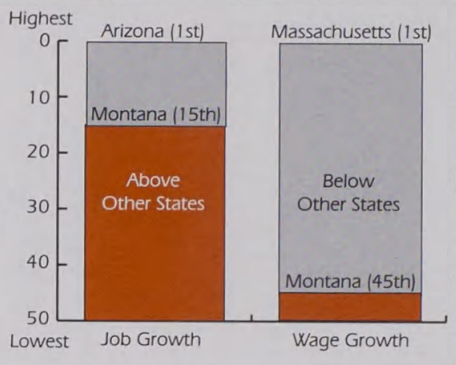
Source: Bureau of Labor Statistics.

Figure 3
Information Technology's Share of U.S. Labor Productivity Growth, 1974 - 1999



Source: Bureau of Labor Statistics.

Figure 4
State Rankings of Job and Wage Growth, 1999 - 2000



Source: Bureau of Labor Statistics.

- Deliveries of computer and data processing services to finance, health care, and retail trade have all significantly increased since the early 1990s.
- In the stock market, IT accounts for about 47 percent of the total U.S. equity market capitalization today, compared to 20 percent five years ago.
- IT has been a major source of overall U.S. economic growth and a major contributor to labor productivity growth, especially during the last half of the 1990s (Figures 2 and 3).

IT Drives Economic Growth

Real growth in the production of goods and services surged during the second half of the 1990s, with much of this growth driven by information technology capital—hardware+software+communication equipment (Figure 2). Information technology accounted for one-fourth of the 2 percentage point jump in the U.S. economy's real growth between the first and second halves of the 1990s.

Some IT benefits to businesses include major savings in areas such as purchase orders and inventories.

IT use in manufacturing leads to increasing returns in production and is estimated to have raised labor productivity by more than 2 percentage points during the 1990s.

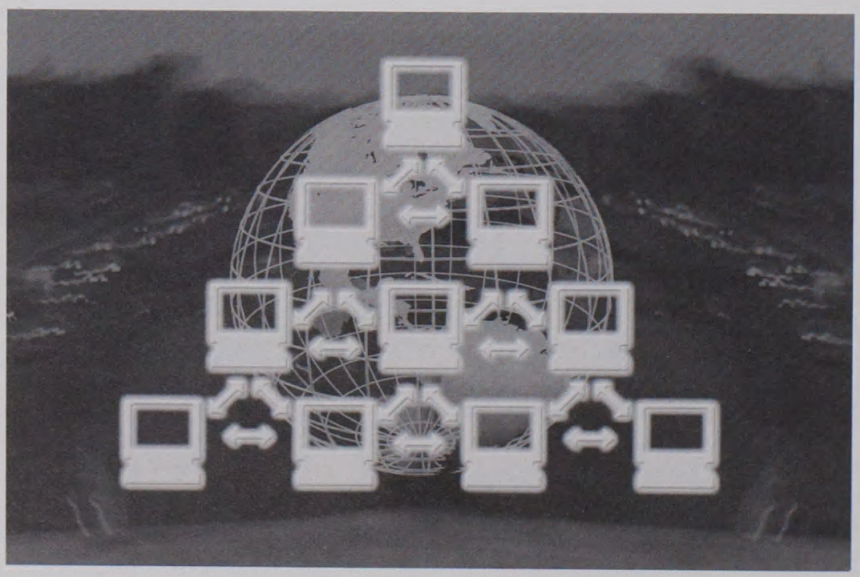
IT has also had overall, economy-wide impacts on labor productivity (Figure 3). From 1996 to 2000, labor productivity grew by about 1 percent per year—IT capital was responsible for about half of that growth.

Higher labor productivity is especially important since it is the basis for higher profits and enables businesses to pay higher wages—a relationship that is key in an economy like Montana where we are nationally ranked at the very low end of the scale. While Montana's recent job growth performance has been strong, wage growth has been far below that of other states (Figure 4).

IT's role in the economy seems to be increasing, but several points to keep in mind are:

- IT growth is not evenly spread over all states and regions.
- IT does not guarantee that we are free from recessions, though it may serve to buffer economic downturns in other sectors of the economy.
- Rising electricity prices and reorganization in the utility industry may impose some short-term restraints on information technology development.❑

Stephen F. Seninger is director of economic analysis at The University of Montana-Missoula Bureau of Business and Economic Research.



Montana Internet and Web Methods

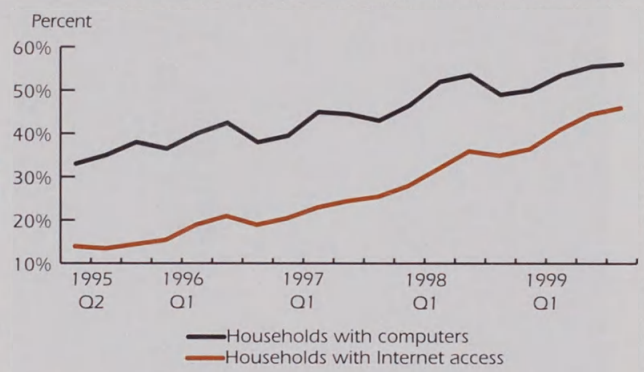
by Paul E. Polzin

The Bureau of Business and Economic Research's Montana Poll tracks computer use, Internet access, and Web methods. By 2000, at least 55 percent of Montana households had a computer and at least 45 percent had Internet access (Figure 1). Montana computer ownership and Internet access equals the U.S. average.

Both Montana households and businesses now use Web methods. Most Web use is concentrated in the basic and intermediate levels. Montana businesses lead housholds in adopting intermediate and advanced Web methods (Table 1).❑

Paul Polzin is director of The University of Montana-Missoula Bureau of Business and Economic Research.

Figure 1
Montana Households with Computer and Internet Access, 1995 Quarter 2 to 1999 Quarter 4



Source: Bureau of Business and Economic Research, The University of Montana-Missoula.

Table 1
Web Methods in Montana, 2000
(In Percent)

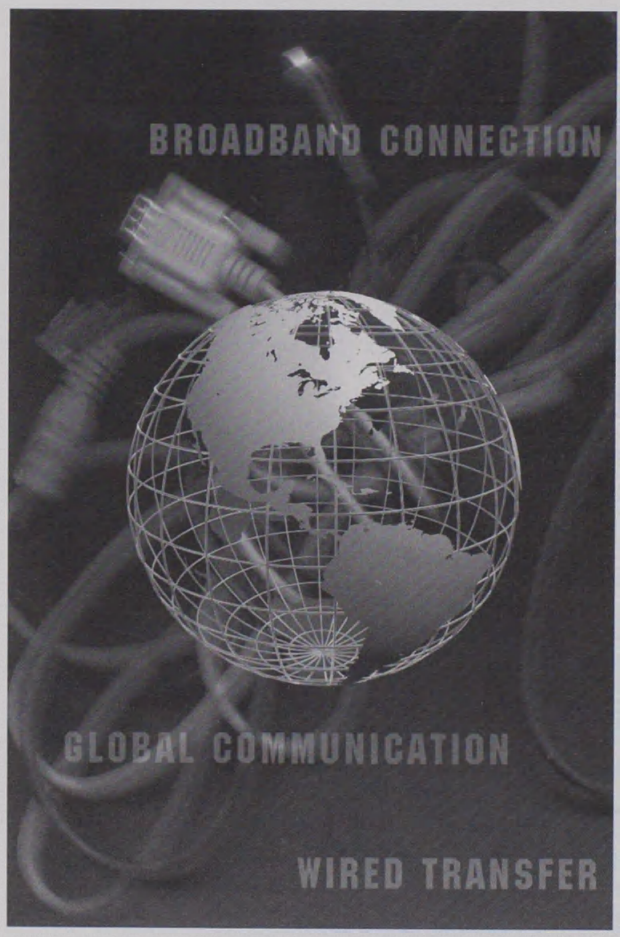
Web Level	Method	All Households	Home Businesses	Low-income Micro-businesses	Largest Manu-facturers	Large Primary Wood Products	Secondary Wood Products Firms
Basic	Uses e-mail	39(+)	55(+)	27	94	50	58
	Searches Web to gather information	40	59	24	89	38	59
	Accesses specs or technical information on Web				77		
	Has Web site	4(+)	19 (+)	17	74	21	27
Intermediate	Purchases products, raw materials, or equipment on Web	20	35	19	46	4	21
	Provides Web-based or e-mail price quotes				51		
	Enhanced own Web site (so that others may obtain info/specs)				47		
	Takes customer orders from own Web site or via e-mail			17	42		18
	Banking, direct deposits, or pays bills over Web	9	15	8	33		6
	Submitted 1999 federal income tax forms over Web	9	12				
	Accesses customer/supplier inventory over Web				31		
Advanced	Provides customers Web-based order or delivery tracking				18	4	
	Advertises on Web site other than own	5	10		14		17
	Provides customer/supplier plant inventory info over Web				11		
	Takes orders or communicates with Web site other than own			7	11		17
	Number of Respondents	1,257	199	201	160	24	224

Notes: Households includes those with home businesses. A (+) denotes that the percentage is probably too low.

Source: Bureau of Business and Economic Research, The University of Montana-Missoula.

A Snapshot of Internet Connectivity in Montana

by Krista Gebert and Robert Campbell



Montanans are starting to see the Internet and e-commerce as valuable tools for improving the state's economy. To take advantage of the information technology wave, the state must have the necessary infrastructure. By most reports, Montana is lacking in infrastructure and has been dubbed by some as one of the "disconnected dozen" states.

What is Montana's situation in terms of information infrastructure? To find out where we stand, the Bureau has done a case study, collecting data on the methods, access speeds, and cost of connecting a Montana business to the Internet. Conducted between November and December of 2000, the study looks at the following Montana cities: Helena, Great Falls, Missoula, Butte, Bozeman, Billings, Kalispell, Sidney, Miles City, Browning, and Wolf Point (Table 1).

To better understand the type of Internet access available, we've provided a rundown of what's available in Montana. We've also included some commonly-used Internet terms.

Internet Access Types

Dial-up (POTS) (PSTN) - Dial-up, Plain Old Telephone Service, or Public Switched Telephone Network

The standard telephone service we all use when making telephone calls, except the parties at the two ends are computer devices (modems) rather than people. Because dial-up access uses normal telephone lines, the quality of the connection is not always good and data rates are limited. The maximum data rate with dial-up access is 56 Kbps (56,000 bits per second). Requirements include a modem and subscribing to an Internet Service Provider (ISP). Advantages to dial-up access include low cost and universal availability. Disadvantages are that service depends on the quality of the phone line, access speeds are slow, and access is limited to voice or data only.

ISDN - Integrated Services Digital Network

Another technique for providing Internet access over POTS. It can provide speeds of roughly 128,000 bits per second over regular phone lines. ISDN requires a special modem and high-quality phone lines. ISDN also requires the phone company to install services within their phone switches to support this digitally switched connection service. Advantages include faster data rates than with dial-up and the ability to

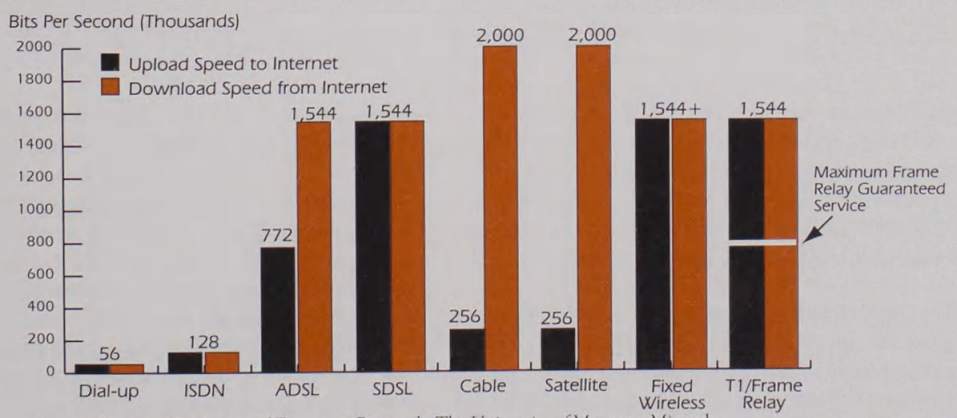
Table 1
Internet Access Available in Selected Montana Cities: Helena, Great Falls, Missoula, Butte, Bozeman, Billings, Kalispell, Sidney, Miles City, Browning, and Wolf Point (Information Collected November and December, 2000)

Type	Selected Speeds (Kbps)[1]	Typical Price Ranges For First Year Monthly Charge[2]: Fixed (Includes Installation)	Usage/Mileage	Cities Available
Dial-up (POTS)	56	Free - $25		All
ISDN	128	90	If > 4 mi. average = $60	All[3]
ADSL	192/384	100 - 300		GF[4], WP
	256/512	122		K
	786/1536	817		WP
SDSL	272	260		BL, BZ, GF, BT
	528	360		BL, BZ, GF, BT
	1,168	610		BL, BZ, GF, BT
Cable	Depends	60 - 70		BL, GF, H, S
Satellite	128/256	338	$.26/MB over 6 MB	All
	128/256	147	$2/hr after 200 hrs	All
	256/512	1,553 - 1,631		All
	267/2,000	2,582-2,933		All
Fixed Wireless	272/640	82 - 117	$15/GB over 1.5GB	H, M
	256	200 - 400		GF
	1,500	1,269		GF
T1 - Dedicated		1,130 - 2,200		All[3]
- Frame Relay	256	700 - 833		All[3]
	512	970 - 1,356		All[3]
- Fractional	256	710		All[3]
	512	920		All[3]

[1] Speed is shown as upload speed/download speed in kilobits per second. If only a single number, upload and download speeds are the same. Speeds shown may not be the only ones available in the selected areas.
[2] Monthly charges are calculated by adding one year's monthly charges plus any one-time setup, installation, or special equipment costs and dividing by 12.
[3] Information about availability was unclear. Some sources said it is available anywhere in Montana, others said it depends on the distance to the nearest fiber optic cable, or in the case of ISDN, the distance to the central office.
[4] Only in selected areas along fiber optic route.

Source: Bureau of Business and Economic Research, The University of Montana-Missoula.

Figure 1
Maximum Single Connection Internet Access Speeds



Source: Bureau of Business and Economic Research, The University of Montana-Missoula.

Commonly-Used Internet Terms

Bit

A bit is the smallest unit of information understood by a computer. A bit can take a value of 0 or 1. A byte is made up of 8 bits, which is large enough to contain a single character. For example, the character 2 would be equivalent to "00000010" when represented in bits. A kilobyte is equivalent to 1,024 bytes. A megabyte is equivalent to 1,024 kilobytes. A gigabyte is equivalent to 1,024 megabytes.

Bandwidth

How much information you can send through a connection. Usually measured in bits per second. A full page of English text is about 16,000 bits. Current dial-up service can move about 56,000 bits in one second. Full-motion full-screen video would require roughly 10,000,000 bits per second, depending on compression.

Central Office

In telephone communication in the United States, a central office (CO) is an office in a locality to which home and business lines are connected on what is called a local loop. The central office has switching equipment that can switch calls locally or to long-distance carrier phone offices.

ISP - Internet Service Provider

An ISP (Internet service provider) is a company that provides individuals and other companies access to the Internet and other related services such as Web site hosting or building. An ISP has the equipment and the telecommunication line access required to provide Internet access to the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication service providers and can provide better service to their customers. May be the same as your telecommunications service provider (see definition below).

Modem - Modulator De-modulator

A modem is a device or program that enables a computer to transmit data over telephone lines. Computer information is stored digitally, whereas information transmitted over telephone lines is transmitted in the form of analog waves. A modem converts between these two forms.

Telecommunications Service Provider (Common Carrier)

The company that owns the physical lines, radio tower, or satellite over which your Internet connection is carried.

transmit will be slower. Disadvantages include added cost (as compared to dial-up) and limited availability due to both lack of local telephone company support and distance to the phone company's central office. If the user is more than three to four miles from the central office, special devices may be installed to boost the signal or ISDN service may not be available.

DSL - Digital Subscriber Line

Another method of obtaining Internet access over POTS that takes advantage of unused bandwidth that already exists on the phone lines. Various types of DSL service exist, with two of the most common being ADSL (Asymmetric Digital Subscriber Line) and SDSL (Symmetrical Digital Subscriber Line). ADSL is "asymmetric" because the speeds of downloading data from vs. uploading data to the Internet are different. ADSL allows downloads from the Internet at speeds of up to 1,544 Kbps (kilobits per second) and uploads at speeds roughly half of the download speed. SDSL is "symmetric" in that its upload and download speeds are the same, with maximum speeds of 1,544 Kbps. DSL requires the availability of high-quality phone lines, a special DSL modem, and support by the local phone company. Advantages include high speed, especially on download, the ability to transmit both data and voice on the same line, and a lower cost than traditional high-speed access options, such as

leased lines. Disadvantages include limited availability and the user has to be within three to four miles of the telephone company's central office or a remote central office.

Cable

A special modem attached to a coaxial cable television system. Cable modems can download data at speeds up to 2,000 kilobits per second (with potential bandwidth estimates of 30,000 kilobits per second) and upload data up to 256 kilobits per second. Requirements are a cable modem and service by a cable provider. Advantages are a faster data rate than either dial-up or ISDN, low cost, and faster download speeds than most DSL service. The disadvantage is that all users on a particular cable segment share the bandwidth, which can significantly impact speed. Additionally, a cable company may react slowly to decreases in performance, as they never sell access by speed or promise consistent speed. Limited upload speed is also a disadvantage of cable accesss.

Satellite

Through a small satellite dish antenna and some specialized receiving/transmitting equipment, the user connects with a satellite that links them to the Internet. Requirements are specialized receiving/transmitting equipment, a small satellite dish, and line-of-sight to the satellite. The primary advantage of satellite access is that it is available almost anywhere. Disadvantages include cost, limited upload speed (roughly 256 Kbps), quality of access can be affected by weather, and, like cable, the number of users may affect upload speed.

Fixed Wireless

An Internet access service that uses a tower to transmit and receive signals from subscribers' locations. Wireless systems can provide access to a large number of subscribers in a relatively large area. It requires a line-of-sight to the provider's tower, an antenna, possibly a lightning arrester, and specialized receiving/transmitting equipment. The advantages of fixed wireless service include speed (1,500 kilobits per second or greater) and availability in areas where cable or optical fiber (leased lines) may not be convenient or economically feasible, such as remote rural areas. Disadvantages include the requirement of a line-of-sight to the tower, performance and cost are affected by distance to the tower, and quality of access can be affected by weather.

T-1 (DC1)

A permanent telephone connection (leased line) between two points set up by a telecommunications common carrier like Qwest and capable of carrying data at 1,544,000 bits per second. At maximum theoretical capacity, a T-1 line could move a megabyte in less than 10 seconds. That is still not fast enough for full-screen, full-motion video, for which you need at least 10,000,000 bits per second. Requirements include specialized equipment, such as a router, and network expertise. T-1 is the fastest speed commonly used to connect small networks to the Internet. The primary advantages of a T-1 connection are high speed and a guaranteed level of quality since the access is not shared with anyone else. The disadvantages are that this is a customized case-by-case service, which is theoretically available anywhere, but can be prohibitively expensive.

Frame Relay

Frame relay can be viewed as a way of utilizing existing leased lines owned by a service provider. Often these lines are made available to more than one subscriber so the provider allocates bandwidth when demand is high. Frame relay networks in the United States support data transfer rates at T-1 (1,544 Kbps) and T-3 (45,000 Kbps) speeds. Requirements include specialized equipment such as routers, bridges, or frame-relay access devices. Advantages include flexibility (it is provided in increments of 64 Kbps) and a lower cost than a T-1 line. Disadvantages are that it may not be available in certain locations, and the guaranteed service is only one-half of the stated speed. Frame relay is being replaced in some areas by ATM (Asynchronous Transfer Mode), which is better at transmitting video, audio, and data over the same line.

Fractional T-1

Another means of utilizing leased lines, such as a T-1, but service is sold in increments. Unlike frame relay, the subscriber is guaranteed the full capacity of their purchased bandwidth. Requirements are similar to a T-1 and include specialized equipment, such as a router, and network expertise. Advantages include a guaranteed speed and flexible bandwidth (generally sold in increments of 64 Kbps).

What's Next?

We did not look at the higher levels of service such as T-3 or OC-3. These types of services are available, though on a more limited basis and with commensurate cost structures. It's likely that most of these access types will become more widely available, more connection capacity will be brought online, and technology will advance to allow more capacity out of existing connections. We can also expect demand to grow, requiring more from the existing information infrastructure. Whether technology and new deployments will keep pace with demand cannot be predicted by the authors, nor can the prices that will result from this dynamic environment. It does appear that more systems may be moving to a price structure where the subscriber pays on a usage basis similar to utilities. A new subscriber will pay a one-time equipment/installation/setup charge, a small monthly subscription charge, and then the bulk of the monthly bill will be based on the amount of information (bits) the subscriber sent or received through their connection.❑

Krista Gebert is manufacturing research project coordinator at The University of Montana-Missoula Bureau of Business and Economic Research. Robert Campbell is director of Montana Business Connections.

The High-Flying U.S. Economy Begins to Drop:

Will the Landing Be Hard or Soft?

by Paul E. Polzin

Higher interest rates and other factors are causing the U.S. economy to slow from the unsustainable growth levels of the late 1990s. The major concern now is whether the economy will decelerate to a moderate growth rate (soft landing) or drop into a full-scale recession (hard landing).

In the most likely scenario, the Gross Domestic Product (GDP) growth rate will fall to about 1.8 percent in 2001, and then rebound to the sustainable 3.1 to 3.6 percent range in 2002 and thereafter. Inflation peaked at 3.4 percent in 2000, and is projected to decelerate to between 2.6 and 2.9 percent. In addition, interest rates are expected to drop from their current levels.

Chances of a Recession

One way to determine whether or not a recession will occur is to examine the recession index (Figure 1). The recession index — a composite of many economic indicators — measures the probability of a recession during the next 12-month period. A 12-month time horizon is used because it takes about a year for most economic impacts to be felt in the economy. If projected beyond a year, these trends will be influenced by events that haven't happened yet.

The recent downturn in the recession index is clear. There is definitely an increased risk of a recession. In fact, the index is at its lowest point in a decade. But this graph also puts things into perspective. Recession seemed likely in 1995 and

Figure 1
WEFA Recession Index
1990-2000

Source: The WEFA Group.

again in 1998, but did not materialize, providing some confidence in the Federal Reserve's counter-cyclical skills. [Editor's note: The latest data show the recession index turned upward in February 2001.]

The Federal Reserve has repeatedly decreased interest rates in early 2001, indicating that they take the economic slowdown very seriously. So maybe we will have a repeat of 1995's "soft landing," with slower growth but no recession. Let's hope these cuts were the right decision at the right time.

However, one might still ask, aren't there fundamental imbalances in the U.S. economy that will drive it into a recession? The most often cited examples are the 0 percent savings rate, the strong dollar and the mushrooming current account balance, as imports far exceed exports. The problem is that it requires 20-20 hindsight to differentiate between critical imbalances and self-correcting phenomenon. It wasn't too many years ago when we were worried about the ever-expanding national debt and the burden the interest payment would place on future generations. Now we are actually paying off the national debt. Similarly, the low savings rate could reflect the capital gains people have made in the stock markets. Americans will go back to their traditional savings habits when they aren't experiencing these stock market gains. The current account deficit could take care of itself as the U.S. economy slows relative to the rest of the world and the dollar declines in value relative to other currencies.

Table 1
Economic Trends for the U.S. Economy, 1997-2005
Actual and Projected as of March 2001

	Actual			Projected					
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Real GDP (chained $), percent change	4.5	4.3	4.0	5.0	1.8	3.1	3.6	3.3	2.9
Inflation (CPI-U), percent change	2.3	1.6	2.1	3.4	2.9	2.6	2.7	2.6	2.6
Interest rates									
90-day T-bills, percent	5.1	4.8	4.6	5.8	4.5	4.8	5.3	5.3	5.3
Mortgage rates, percent	7.7	7.1	7.3	7.9	7.0	7.3	7.3	7.3	7.3
Housing starts, millions	1.5	1.6	1.7	1.6	1.4	1.5	1.4	1.4	1.4
Unemployment rate, percent	4.9	4.5	4.2	4.0	4.7	5.0	5.1	5.2	5.1

Source: The WEFA Group.

Influences of the World Economy

World economic trends in the late 1990s were actually quite different from those in the United States. The United States experienced fast growth while the world economy decelerated sharply in 1998 and only made a modest recovery in 1999. The 1998 slowdown was due to a number of factors:

- The crises in Asia and Latin America.
- The meltdown in Russia's economy.
- Continued economic doldrums in Japan.

However, the preliminary estimates show 2000 to be a strong year for the world economy.

In the late 1990s, the strong performance for the U.S. economy relative to the rest of the world meant that our nation was an attractive place for investment. The strong inflow of funds seeking U.S. investments helps explain the strong dollar and the unfavorable balance of trade.

In early 2001, the U.S. economy is expected to be weaker compared to a strong world economy. This would probably weaken the dollar both with respect to the Euro and other currencies. The forecasts are for the Euro to strengthen to about parity with the dollar by the end of 2001. The current rate is about 90 cents to the dollar. Obviously, the Euro was overvalued when it first came out, and it probably won't return to that level.

Recently, recession fears have spread to Europe and elsewhere. Now there is some question that the U.S. economy would not be that much weaker relative to the rest of the world. If the rest of the world also slows down, the value of the dollar and the current account deficit may not correct as quickly as expected.

Effects of the Stock Market

Whether or not the stock market is overvalued may be phrased in terms of price/earnings ratios. In early 2001, the price-earning ratio for the S&P 500 was about 25-to-1. The long-term average going back to the 1880s is about 15-to-1. It has never remained above 20 for any long period of time. This just simply says that the prices of these stocks are much too high, given the earnings of these companies. Sooner or later, investors are going to realize that these earnings will not materialize, and the prices of the stocks will fall.

The counter argument says that things have changed and the market realizes it. Therefore, the prices of early 2001 correctly reflect current conditions. The counter argument says that the major excesses have already been corrected. The greatest speculation has been in the high-tech and dotcom sector. The bloodbath has already taken place for these firms, and some stock indices (such as the NASDAQ) have fallen by a half.

...the Federal Reserve has been successful in avoiding a recession for ten years and inflation remains under control. In other words, we appear more successful at managing our economy.

The argument goes on to say that the companies in the S&P 500 are much more traditional firms and they are the ones benefiting most from the increases in technology and the "new economy." So these higher prices simply reflect the increased earnings investors expect in these sectors.

The final point in the counter argument is that risk has been reduced. Nobody has declared the business cycle dead. But the Federal Reserve has been successful in avoiding a recession for ten years and inflation remains under control. In other words, we appear more successful at managing our economy.

The plunge of the S&P 500 Index in March gives more credence to the first argument rather than the counter arguments.

Influences of the New Administration

The essence of President George W. Bush's economic proposal is to use widespread tax cuts to return the budget surplus to the population. Some of his plans include lowering marginal tax rates, increasing the child-care tax credit to $1,000, eliminating the marriage penalty, and eliminating estate taxes.

The two basic tools of the federal government are fiscal policy and monetary policy. The Federal Reserve is in charge of monetary policy, mostly by influencing interest rates. Taxes are fiscal policy, and tax cuts are a stimulating fiscal policy. The size of Bush's tax cuts make them a very large fiscal policy stimulus.

The major questions are not about the impacts, but rather the timing. When these tax cut proposals first came out last fall, the U.S. economy was hurtling along at an unsustainable 5 percent rate, led by consumer spending. If taxes had been cut then, they would have further stimulated consumer spending, making things even worse and perhaps forcing the Federal Reserve to raise interest rates even further. Now the economy is slowing, and the stimulating impacts of tax reductions may come at just the right time. But will they? It takes time to get such a major proposal through Congress, and the effective dates of the tax cuts may not be until well into 2002. By then, the United States might be in another financial situation.

In summary, the United States is in the contractionary phase of the business cycle. The U.S. economy is definitely slowing down. The real question now is how much will it slow down? Will we decelerate down to a 1 or 2 percent growth rate? Or, will the growth rate keep plunging right through zero? The preliminary indicators, and past experience, suggest that it will be the former rather than the latter. In other words, another "soft landing" for the U.S. economy.❑

Paul Polzin is director of The University of Montana-Missoula Bureau of Business and Economic Research.

Montana's Economic Outlook

by Paul E. Polzin

In the past 30 years, there have been a number of economic fads or trends touted as fundamentally restructuring the Montana economy. Among them were the "original" energy shortage of the 1970s, the growth of service industries, and, most recently, the internationalization of the world economy.

It is not that these were unimportant events, or that they had no impact in Montana. It's just that we must keep straight what is changing, and what is not changing. Three important characteristics of Montana's economy include:

- Physical isolation from major markets. The bulk of the U.S. population continues to live east of the Mississippi. The fastest growing portion of the country is the Southwest. Both of these areas are far from Montana.
- A small and dispersed population.
- More dependance on natural resources than almost any other region in the country.

These characteristics do not change and must be taken into account when analyzing the impact of major events (such as the energy crisis) and new occurrences on the state's economy.

For example, one occurrence — Internet technology (IT) — has penetrated even the most remote areas of Montana. While IT provides Montanans with the opportunity to conduct international business from anywhere in the state, it does not eliminate all the impacts of isolation. Montana is still a state that is isolated from major markets.

A second example is the oft-heard claim that Montana's economy is no longer dependent on natural resources. We will now look at two sets of data and see that there has been a dramatic change in how Montanans work, but not in what we produce.

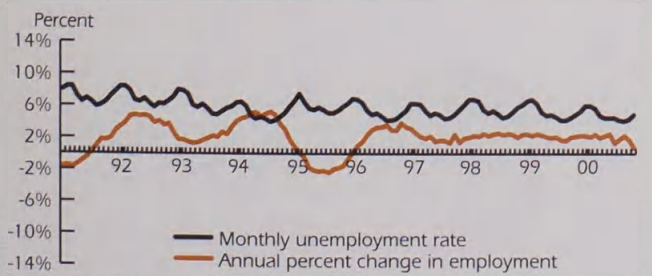
GSP and Employment

There are many ways to measure Montana's economy. We will look at Gross State Product (GSP), which represents the value of production (both goods and services) in Montana, and employment, which shows how residents make a living.

No matter how it is measured, in terms of GSP or employment, the Montana economy is larger now than it was 18 years ago. In 1982, the GSP was about $14 billion and in 2000 it was roughly $20 billion. That calculates to a 2 percent growth rate, and it's one of the ways the 2 percent per year figure for the sustainable growth in Montana is assessed.

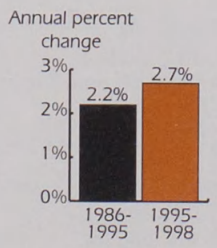
The major changes in the Montana economy, however, have

Figure 1
Monthly Unemployment Rate and Change in Monthly Employment, Montana January 1991-November 2000



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Figure 2
Montana Gross State Product Per Worker Chained 1996 Dollars



Source: U.S. Bureau of Economic Analysis.

been in terms of employment and not GSP. In other words, there has not been much change in what we produce, but there has been a big change in how we produce it.

Take, for example, the basic industries. The basic industries are those that send products outside the state and are responsible for injecting new dollars into the Montana economy. These dollars are spent and re-spent in the derivative industries. Using Gross State Product, the basic industries accounted for about 26 percent of GSP in 1982, and about 27 percent in 2000. In other words, very little change.

In employment, these same industries dropped from 29 percent in 1982 to 23 percent in 2000. What reconciles this drop in employment, but stability in terms of GSP? It is differences in labor productivity. The basic industries are mostly capital-intensive goods-producing industries. Continued investment in machines and other capital has increased labor productivity, meaning that fewer workers can produce the same or even greater output. This puts the declining employment in natural resource industries in a different light. Declining employment doesn't mean that these are stagnant or declining industries. In fact, it means just the opposite. They are innovative industries increasing productivity through continued investment.

The "New Economy" in Montana

One of the measurable impacts of Internet technology is acceleration in labor productivity. And we have evidence of that here in Montana. The GSP per worker increased 2.2 percent from the mid-1980s to the mid-1990s (Figure 1). Then, in the last three years, it accelerated to 2.7 percent per year, closely following national trends. The basic message of this data is that the market basket of goods Montana produces won't change much, but there will continue to be big changes in the way they are produced.

The important thing about this productivity increase is where it has been occurring. Productivity continues to grow capital-intensive, commodity-producing industries. The big change is that information technology and computerization have brought increased productivity to the trade and service sector. In both GSP and employment, the trade and service sectors account for much of the economy. Therefore, even modest increases in productivity here can have significant impacts.

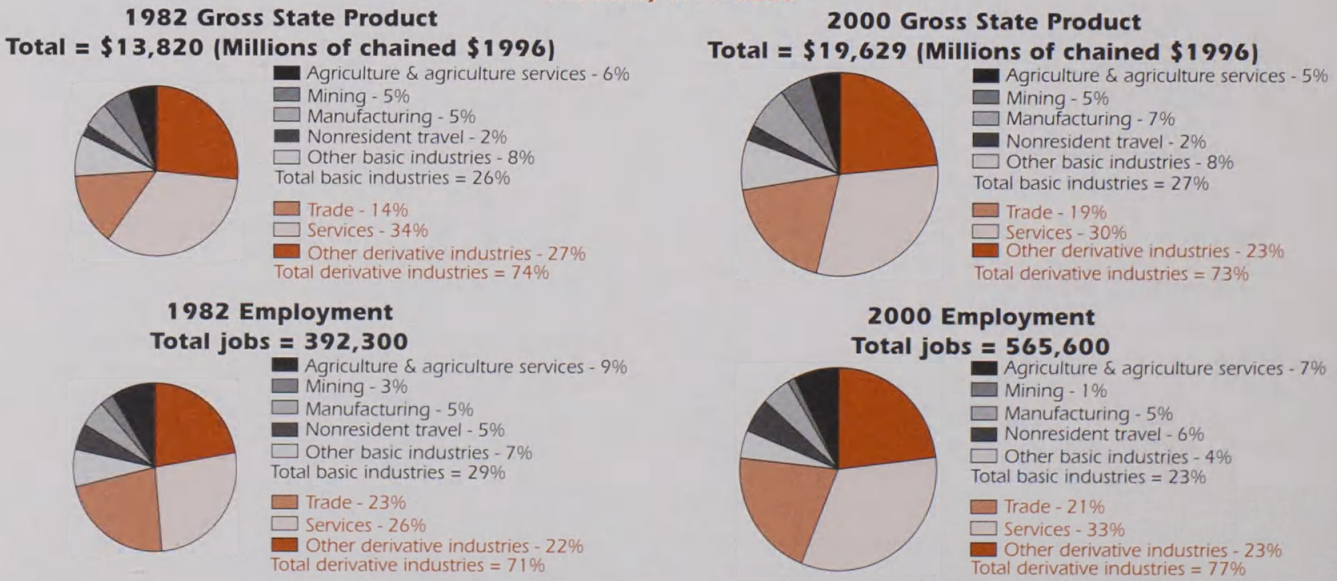
Forecast

Cost of Electricity

A slowdown is expected in the Montana economy, from a 2.2 percent growth rate in 2000 to about a 1.1 percent increase in 2001 and then 1.6 percent in 2002. The major cause of this slowdown is not the national economy, but the impact of higher electricity prices in Montana. A number of major industrial facilities, including two large mines in the Butte area, a pulp and paper plant in Missoula, and the aluminum refinery in Columbia Falls have already shut down or made cutbacks.

And these are only a few of the facilities affected by the electricity crisis. A survey of major manufacturers found many of these facilities worried about the impact of electricity in the

Figure 3
Gross State Product and Employment
Montana, 1982-2000



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

next few years. If the electricity crisis is milder and some of the impacts don't occur, it becomes a positive risk and growth could be higher than anticipated.

Influence of U.S. Economy

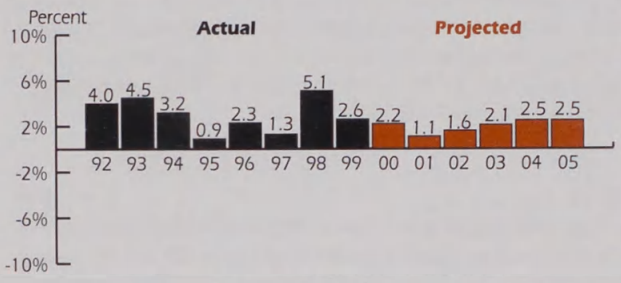
In addition to increasing energy costs, a national recession continues to threaten Montana's economy. Our baseline forecasts assume a "soft landing," or slower growth but no recession. If the conditions do deteriorate into a recession, it will probably decrease growth in Montana (see outlook for the U.S. economy, pages 10-12). But it is not clear just how a recession would affect Montana. The last official recession was in 1990-91, and there was almost no overall impact in Montana. In fact, the near recessions in 1995 and 1998 had a greater impact on overall state data trends.

Each recession is different. The 1990-91 recession was concentrated on the two coasts, especially in southern California. In 1991, Montana was in the midst of a construction boom, which counter-balanced some of the impacts of the national cycle. Until more information is known about its exact nature, it is unclear what a recession would mean for Montana.

Other Factors

Volatility of the farm sector may also have an impact on Montana's economy in upcoming years. However, the expected decline in the dollar may help export sales. There also continues to be the risk associated with decreased supplies of timber from U.S. Forest Service land. And, finally, labor shortages are starting to come to light, especially skilled labor, and other impacts of the tightening labor markets. ❑

Figure 4
Actual and Projected Percent Change in Nonfarm Labor Income, Montana
1992-2005



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Paul Polzin is director of The University of Montana-Missoula Bureau of Business and Economic Research.

Table 1
Populations, Montana and BEA Regions
1990-2010

	Thousands of Persons			Average Annual Percent Change	
	Actual 1990	Actual 2000	Projected 2010	1990-2000	2000-2010
Montana	800	902	988	1.2%	0.9%
West	335	400	451	1.8%	1.2%
Missoula	79	95	108	1.8%	1.3%
Flathead	60	75	89	2.3%	1.7%
Butte-Anaconda	44	45	42	0.1%	-0.7%
Lewis and Clark	48	56	63	1.5%	1.2%
Ravalli	25	36	43	3.7%	1.7%
Rest of West	79	93	106	1.6%	1.3%
North Central	181	183	187	0.1%	0.02%
Cascade	78	80	81	0.3%	0.1%
Rest of North Central	103	103	106	-0.4%	0.3%
Southeast	284	319	350	1.2%	0.9%
Yellowstone	114	128	143	1.2%	1.1%
Gallatin	51	64	72	2.4%	1.1%
Richland	11	10	10	-0.7%	0.0%
Custer	12	12	13	0.4%	0.6%
Rest of Southeast	96	105	112	0.9%	0.6%

Source: Bureau of the Census, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula.

Outlook for Missoula County

Missoula continues as the major trade and service center in Western Montana. Hospital and highway construction projects buoyed the growth figures for 1998, 1999, and 2000. In addition, continued growth in transportation has boosted Missoula over Billings as the largest trucking industry city. Completed construction projects and higher electricity prices are the main factors projected to slow growth in 2001.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Missoula	$23,200	109.4	17	14	5
Ravalli	$17,700	83.5	44	36	35
Lake	$16,600	78.3	52	39	40
Sanders	$15,300	72.2	50	50	51
Mineral	$14,900	70.3	49	51	52

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Missoula County 1992-2005

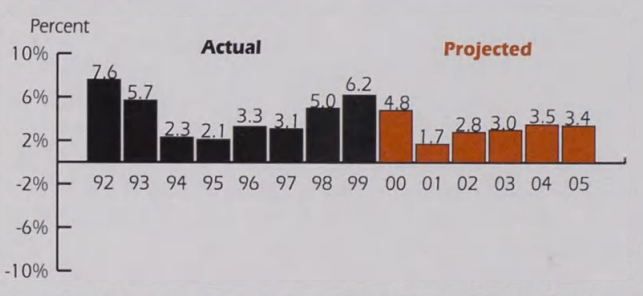


Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Missoula County January 1991-November 2000

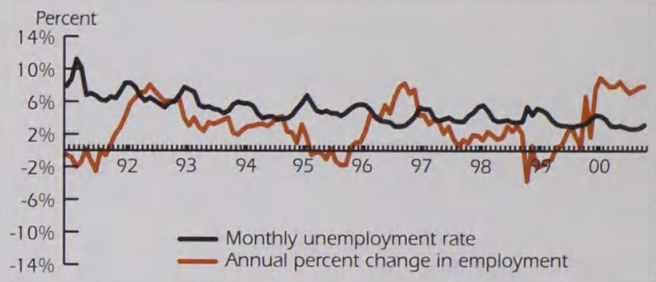
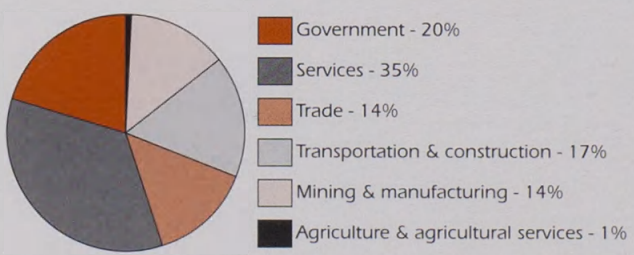
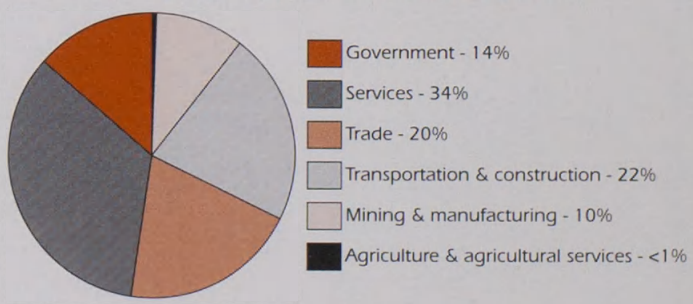


Figure 3
Gross County Product and Employment Missoula County, 1982-2000

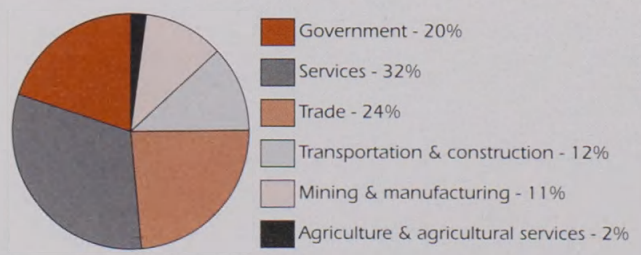
1982 Gross County Product
Total = $1,421 (Millions of chained $1996)



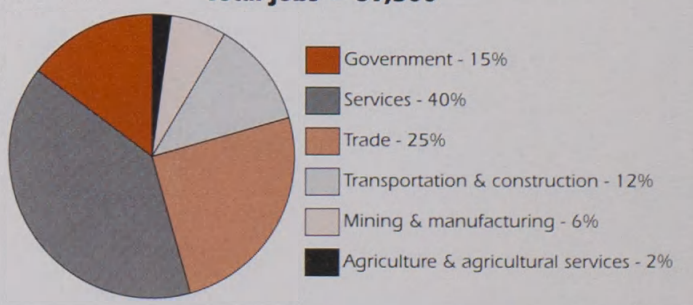
2000 Gross County Product
Total = $2,571 (Millions of chained $1996)



1982 Employment
Total jobs = 36,900



2000 Employment
Total jobs = 69,500



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Flathead County

Flathead County experienced rapid but volatile growth in the 1990s. The county's large and diversified manufacturing sector accounted for most of the trends in the 1990s. The 1998 increase reflects the Columbia Falls Aluminum Company (CFAC) wage settlement. The opening of a new call center in 2000 was counter-balanced by layoffs and closures in high-tech and wood products industries. Electricity-related reductions are scheduled at CFAC in 2001, with the full impacts projected to be felt by 2002.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Flathead	$22,300	105.1	14	15	8
Lincoln	$16,300	76.9	45	40	42
Glacier	$15,400	72.6	12	54	49

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Flathead County 1992-2005

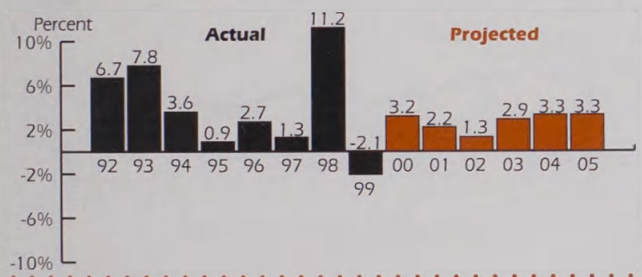
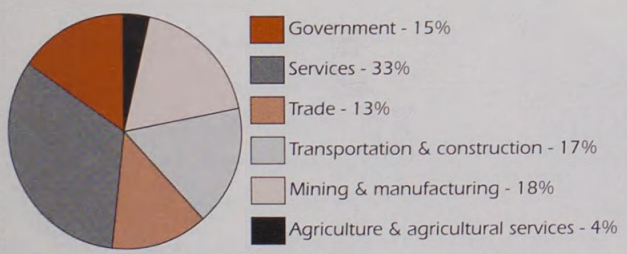


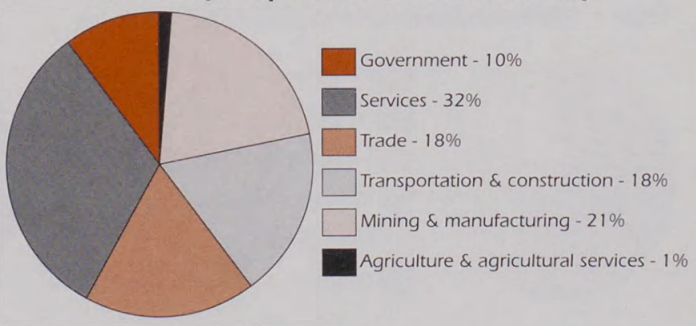
Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Flathead County January 1991-November 2000

Figure 3
Gross County Product and Employment Flathead County, 1982-2000

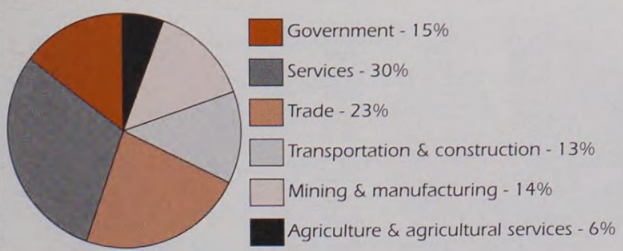
1982 Gross County Product
Total = $880 (Millions of chained $1996)



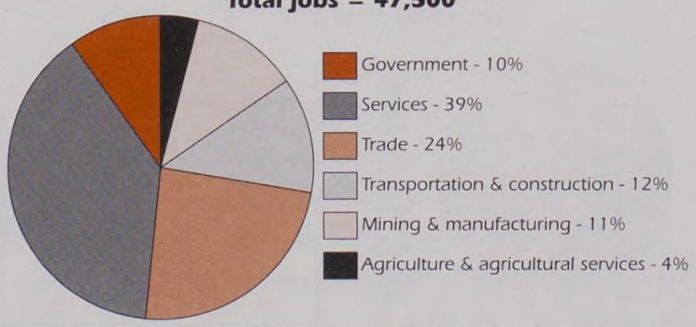
2000 Gross County Product
Total = $1,697 (Millions of chained $1996)



1982 Employment
Total jobs = 23,900



2000 Employment
Total jobs = 47,500



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Butte-Silver Bow and Anaconda-Deer Lodge Counties

We have not yet completely revised our economic analysis systems that will allow the separate reporting of data for Silver Bow and Deer Lodge counties. For this year, the title of each graph or table denotes the area for which it applies. High electricity prices may have permanently closed two nearby mines. The sale and reorganization of the Montana Power Company may result in further job losses.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Silver Bow	$22,100	104.2	13	17	9
Deer Lodge	$17,500	82.5	41	47	36
Beaverhead	$20,100	94.8	34	24	18
Granite	$18,600	87.7	32	32	30

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Butte-Silver Bow and Anaconda-Deer Lodge Counties, 1992-2005

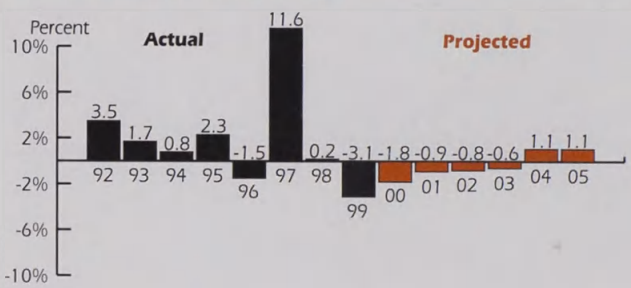


Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Silver Bow County January 1991-November 2000

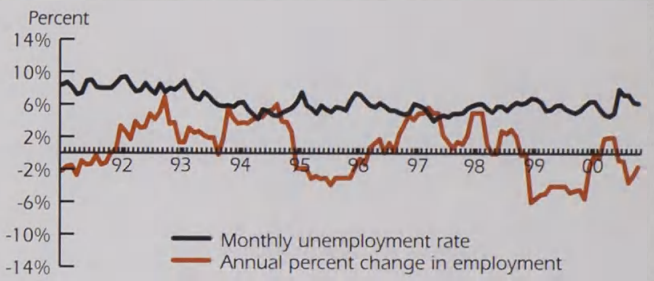
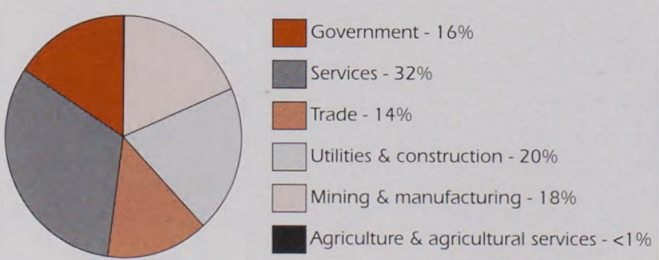
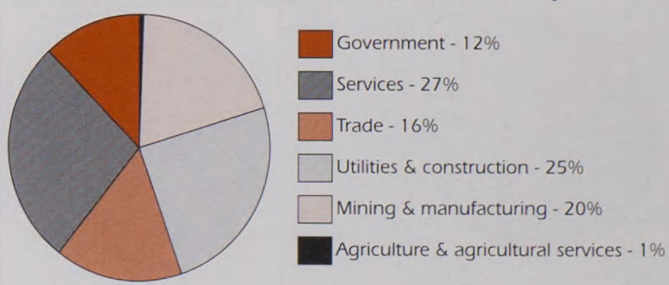


Figure 3
Gross County Product and Employment
Silver Bow County, 1982-2000

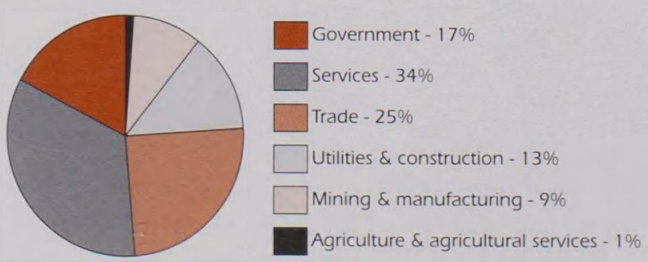
1982 Gross County Product
Total = $734 (Millions of chained $1996)



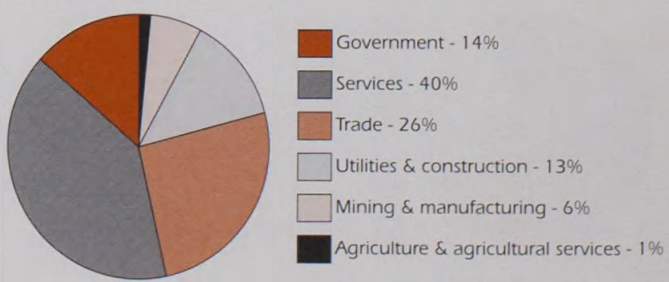
2000 Gross County Product
Total = $868 (Millions of chained $1996)



1982 Employment
Total jobs = 16,500



2000 Employment
Total job = 18,400



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Cascade County

Malmstrom Air Force Base and trade center activities account for more than half of the economic base in Great Falls. A national company's call center expanded its operations in downtown Great Falls in mid-2000. The full impact of this expansion will not be felt until 2001, when it is projected to counterbalance the completion of several large construction projects. Health care has resumed modest growth after the consolidations of the late 1990s.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Cascade	$23,700	111.8	7	5	3
Chouteau	$20,900	98.6	42	1	13
Teton	$18,800	88.7	33	8	27
Fergus	$19,700	92.9	22	19	24

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Cascade County 1992-2005

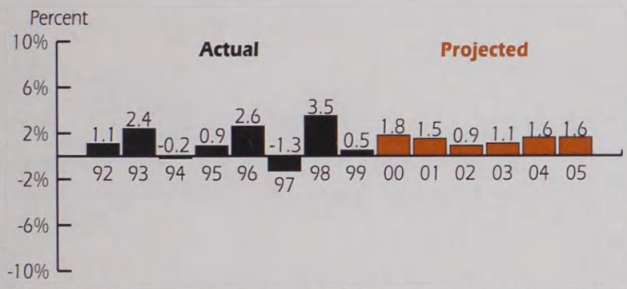
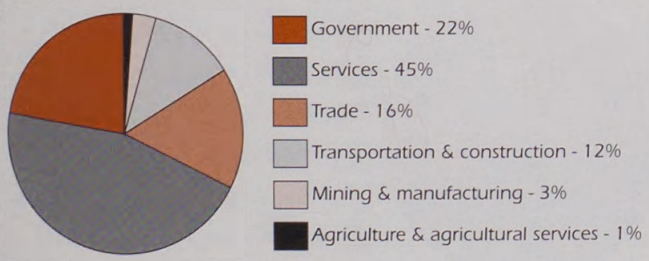


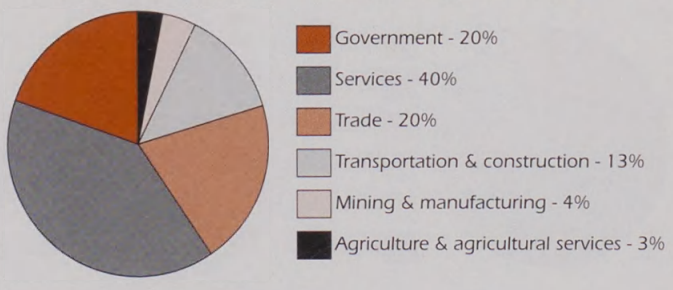
Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Cascade County January 1991-November 2000

Figure 3
Gross County Product and Employment Cascade County, 1982-2000

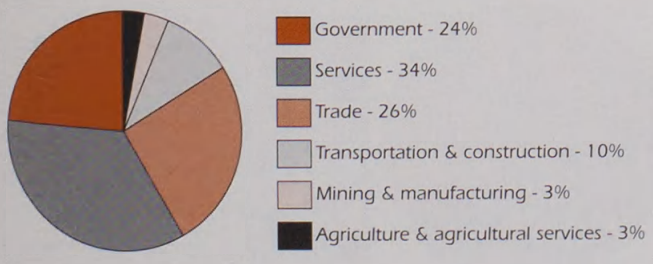
1982 Gross County Product
Total = $1,785 (Millions of chained $1996)



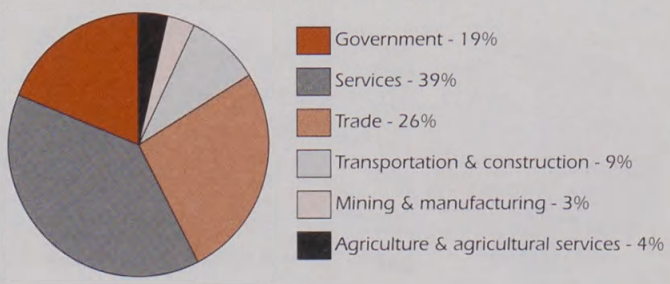
2000 Gross County Product
Total = $1,960 (Millions of chained $1996)



1982 Employment
Total jobs = 41,200



2000 Employment
Total jobs = 47,900



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Lewis & Clark County

The precipitous employment drop in 1999 and subsequent recovery in 2000 must be interpreted with caution. This trend does not appear in the income data, and revisions may be made in these preliminary employment figures. The healthy nonfarm labor income growth in 1998 and 1999 reflect military-related construction at Fort Harrison, plus welcome expansion in communications. Further construction projects are currently underway at Fort Harrison, with more projects in development. Helena depends on state and federal government, and neither is likely to be a growth engine in the near future.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Lewis & Clark	$23,600	111.3	6	7	4
Jefferson	$22,100	104.2	15	6	10
Broadwater	$18,700	88.2	43	35	29
Meagher	$19,900	93.9	47	20	19
Powell	$17,200	89.6	19	22	26

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Lewis & Clark County 1992-2005

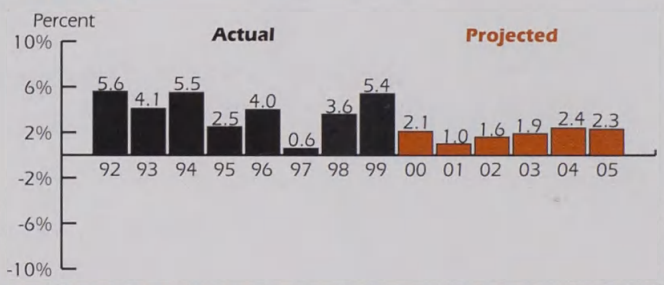


Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Lewis & Clark County January 1991-November 2000

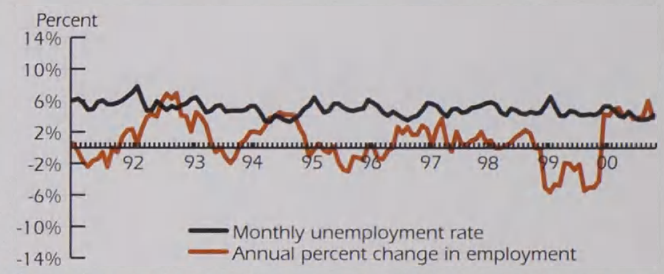
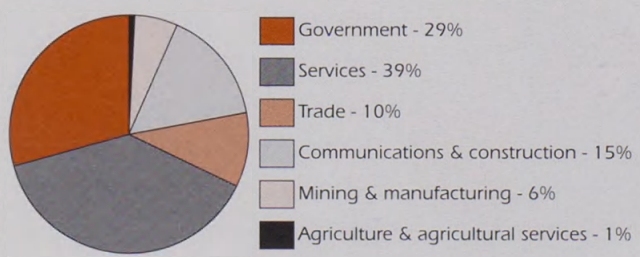
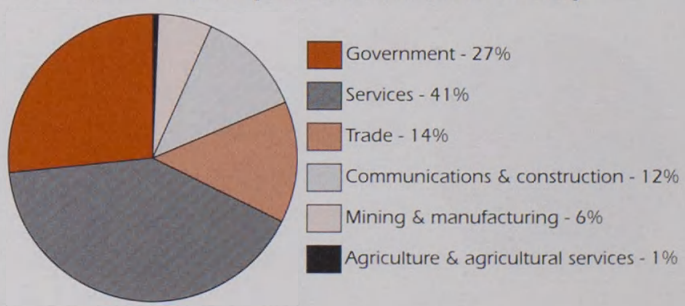


Figure 3
Gross County Product and Employment
Lewis & Clark County, 1982-2000

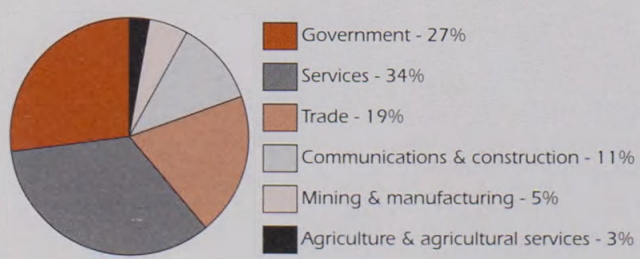
1982 Gross County Product
Total = $1,094 (Millions of chained $1996)



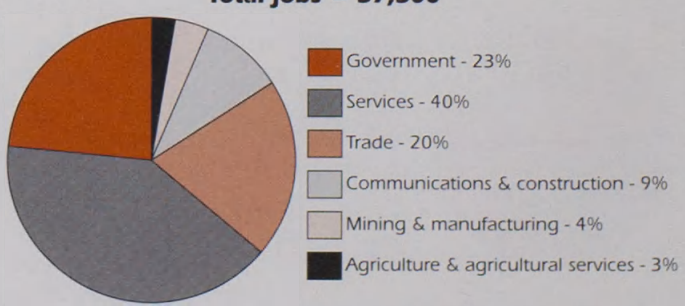
2000 Gross County Product
Total = $1,475 (Millions of chained $1996)



1982 Employment
Total jobs = 26,000



2000 Employment
Total jobs = 37,500



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Yellowstone County

Billings continues as Montana's major trade and service center, but the trade center components are starting to diverge. Wholesale trade and parts of retail trade (especially general merchandise stores) have shown some softening in the latest data. However, business and professional services growth continues to be strong. Both the preliminary income and employment data for 2000 show some slowing in Yellowstone County's economy.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Yellowstone	$24,400	115.1	4	4	2
Park	$18,700	88.2	21	41	28
Madison	$17,400	82.1	36	38	37
Sweet Grass	$19,000	89.6	19	22	26

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Yellowstone County 1992-2005

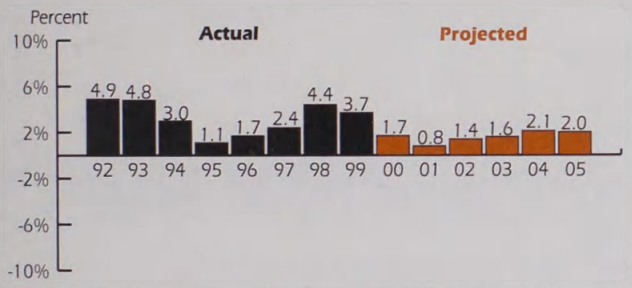


Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Yellowstone County January 1991-November 2000

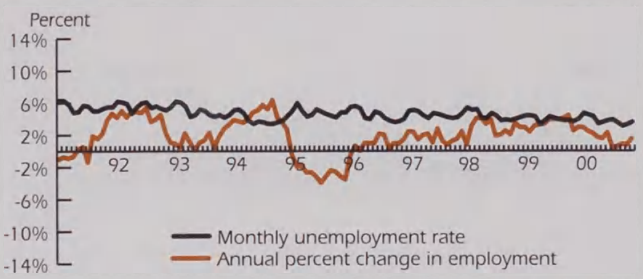
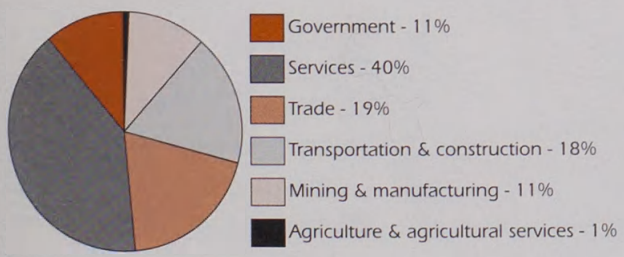
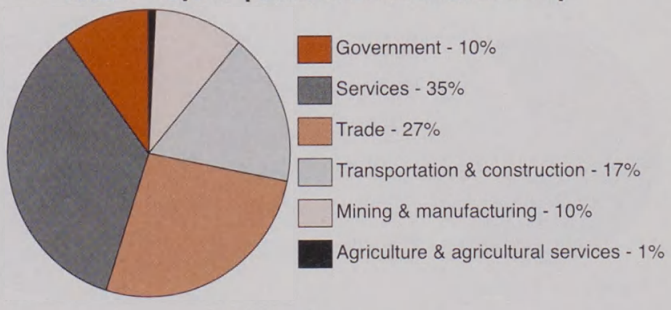


Figure 3
Gross County Product and Employment Yellowstone County, 1982-2000

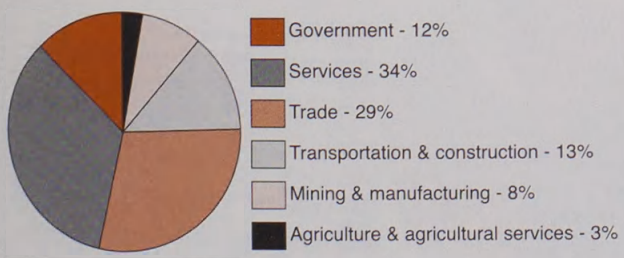
1982 Gross County Product
Total = $2,735 (Millions of chained $1996)



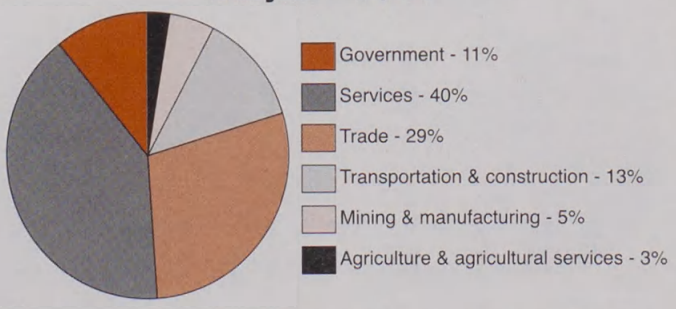
2000 Gross County Product
Total = $3,697 (Millions of chained $1996)



1982 Employment
Total jobs = 63,800



2000 Employment
Total jobs = 91,800



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Gallatin County

The Bozeman area economy posted some of the fastest growth rates in the state during the 1990s. Montana State University remains the largest component of the county's economic base, but high-tech manufacturing has accounted for much of the recent growth. Nonresident travel is also important in Gallatin County, but much of this industry is located outside Bozeman, in Big Sky and West Yellowstone. The deceleration in 2000 was due to the completion of several construction projects and slightly slower growth in manufacturing.

Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Gallatin	$22,800	107.5	28	18	6
Park	$18,700	88.2	21	41	28
Madison	$17,400	82.1	36	38	37
Sweet Grass	$19,000	89.6	19	22	26

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Gallatin County 1992-2005

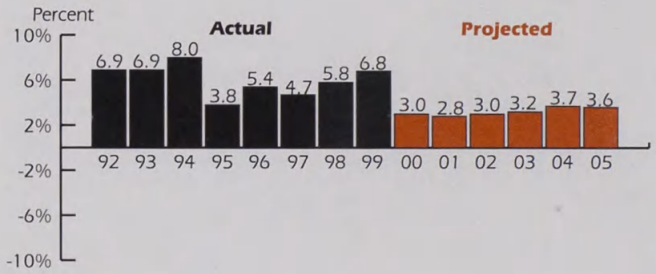
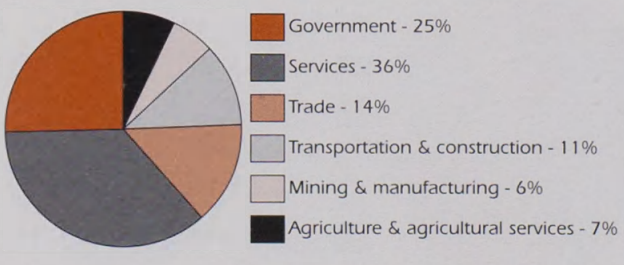


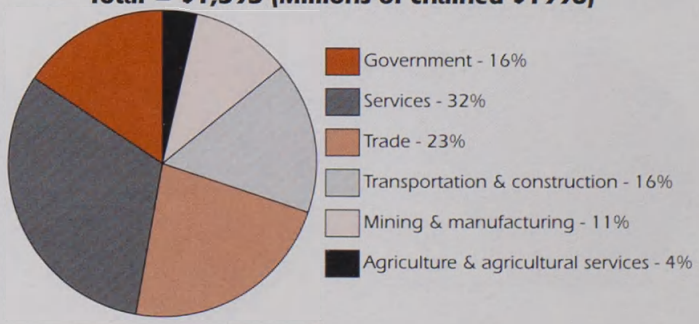
Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Gallatin County January 1991-November 2000

Figure 3
Gross County Product and Employment
Gallatin County, 1982-2000

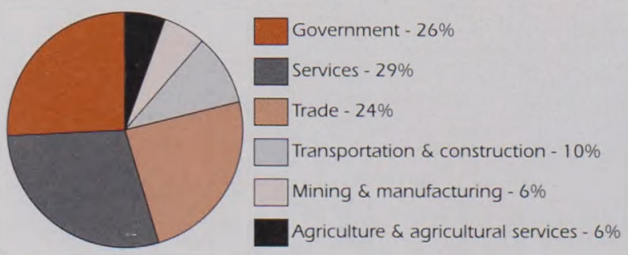
1982 Gross County Product
Total = $829 (Millions of chained $1996)



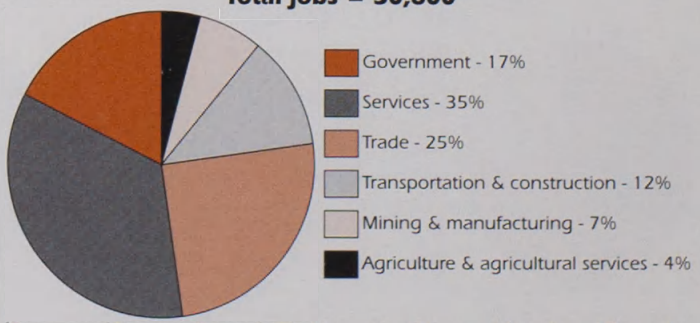
2000 Gross County Product
Total = $1,593 (Millions of chained $1996)



1982 Employment
Total jobs = 23,500



2000 Employment
Total jobs = 50,600



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Outlook for Ravalli County

Northern Ravalli County is part of the Missoula area economy, and commuters (those living in Ravalli County, but working in Missoula) are the largest component of the economic base. The impact of these commuters cannot be pictured in the gross county product and employment data shown below, but estimated commuter income is presented. Projected slower growth in the next decade reflects the deceleration in Missoula. The modest peak in employment growth during mid-2000 may incorporate some forest-fire impacts. The projected 2001 decline in nonfarm labor income simply reflects decreases in certain sectors from temporary fire-related levels in 2000.

Figure 1
Actual and Projected Percent Change in Nonfarm Labor Income, Ravalli County 1992-2005

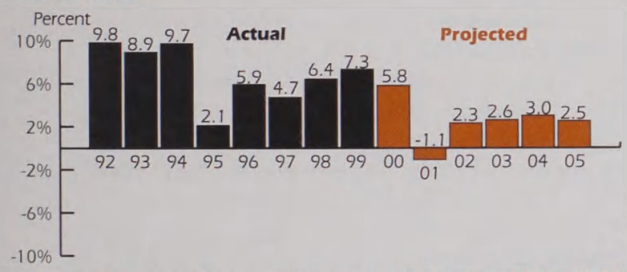


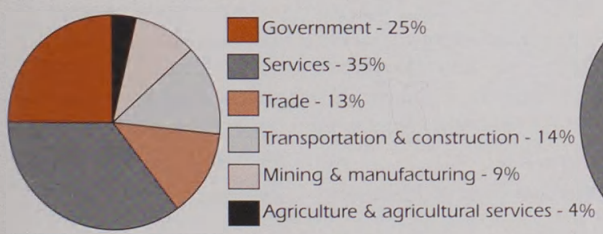
Table 1
Per Capita Income, 1998 Selected Counties

	--1998 Per capita income--		--Rank--		
County	Amount	% of Montana	1980	1990	1998
Ravalli	$17,700	83.5	44	36	35
Missoula	$23,200	109.4	17	14	5
Lake	$16,600	78.3	52	39	40
Sanders	$15,300	72.2	50	50	51
Mineral	$14,900	70.3	49	51	52

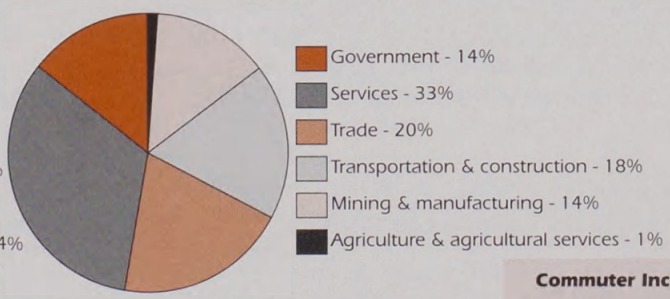
Figure 2
Monthly Unemployment Rate and Change in Monthly Employment, Ravalli County January 1991-November 2000

Figure 3
Gross County Product and Employment Ravalli County, 1982-2000

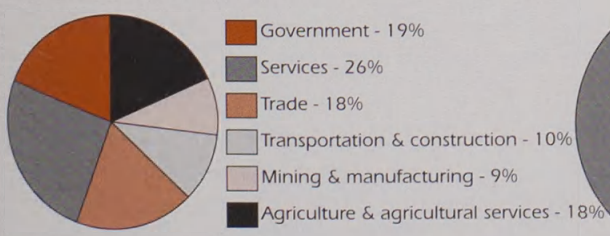
1982 Gross County Product
Total = $209 (Millions of chained $1996)



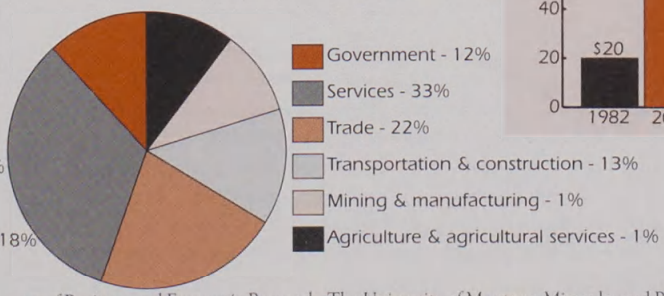
2000 Gross County Product
Total = $474 (Millions of chained $1996)



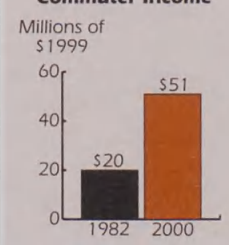
1982 Employment
Total jobs = 7,600



2000 Employment
Total jobs = 17,600



Commuter Income



Sources: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula; and Research and Analysis Bureau, Montana Department of Labor and Industry.

Travel and Recreation Outlook 2001

by Thale Dillon and Kim McMahon

Year 2000 in Review

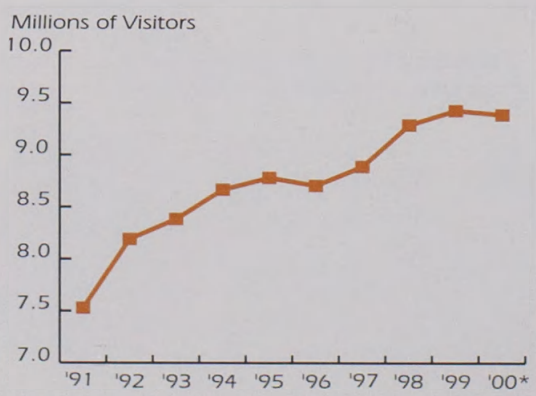
In 1999, the Institute for Tourism and Recreation Research predicted that nonresident visitation to Montana would increase by 2 percent in 2000. However, the year 2000 proved to be full of surprises that combined to influence travel to Montana in a negative way. Preliminary data shows a half of 1 percent decrease in nonresident visitation. This decrease may seem disappointing in relation to the predicted increase, but the end result could have been much worse given the occurrences of the past year. All told, Montana hosted nearly 9.4 million visitors in 2000 (Figure 1), visitors and they spent a total of $1.64 billion in the state economy.

A number of economic factors shaped the year 2000, in turn influencing travel to Montana. Extremely low unemployment levels increased the amount of disposable income available to consumers. Along with the active stock market and the low inflation rates, consumer confidence was boosted, stimulating spending. Unfortunately for Montana, strong national economic conditions generally encourage Americans to take more exotic vacations, perhaps taking advantage of the strong dollar and favorable exchange rates to travel internationally. Domestic travel, such as a trip to Montana, is something that can be saved for a later time when financial conditions are tighter.

According to national data, the high gasoline prices experienced last summer had some impact on travel. One in five travel groups altered their plans as a result of the price hike. Of these, 45 percent either shortened the duration of their trip or shortened the distance of their trip. Only 1 percent of travelers nationwide chose to cancel their trip altogether. Still, Montana is a car-and-gasoline intensive state to visit, and it is reasonable to assume that some of the observed decreases in summer visitation were due to high gas prices.

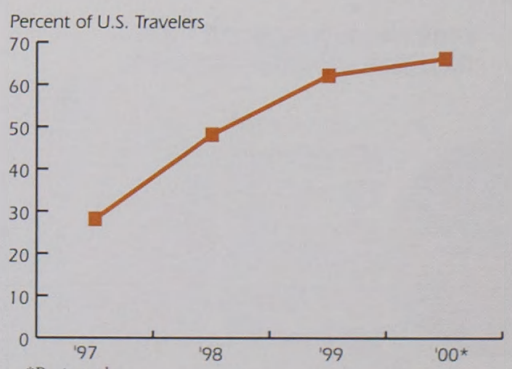
The 2000 fire season turned out to have less of an impact on visitation than most expected. This is not to say that nobody suffered from it — many people were devastated. However, on a statewide level, the impacts were not as large as some had feared. August and September, the two peak fire months, saw visitation decreases of 3 and 5 percent, respectively. According to Travel Montana, bed tax collections were up 4 percent in 2000, while Smith Travel Research reports a 2 percent increase in occupancy rates between 1999 and 2000.

Figure 1
Nonresident Visitation to Montana



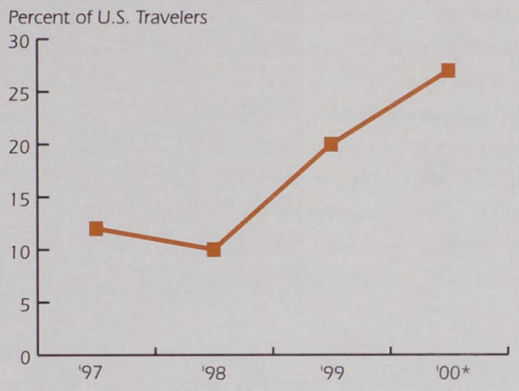
*Projected
Source: Institute for Tourism and Recreation Research, The University of Montana-Missoula.

Figure 2
Online Travel Planning



*Projected.
Source: Travel Industry Association of America.

Figure 3
Online Travel Bookings



*Projected
Source: Travel Industry Association of America.

2001 Outlook

Despite last year's decline, Montana can expect nonresident visitation to increase between 2 and 3 percent in 2001. There are a number of factors that will shape this visitation.

Economic Factors

The slow-down of the national economy, while not necessarily considered good news, is promising for Montana as a travel destination. As mentioned previously, people take domestic vacations when economic conditions are tighter. Currently, unemployment is on an upward trend, the stock market has cooled off considerably, and consumer confidence is on the retreat compared to last year. A weaker dollar may also encourage increased international visitation to the country and to Montana.

Canadian Visitation

Although the Canadian dollar has not improved its standing in relation to U.S. currency, a vacation in the U.S. can still be a good deal for Canadians due to differences in the general price level of certain commodities, such as restaurant meals and hotel rooms. Visitation from Canada is on an upward trend, predicted to increase nationally a total of 23 percent between 1999 and 2003. This increase is due mainly to a strong Canadian economy with continued employment growth and higher wages.

Lewis and Clark

While the Lewis and Clark bicentennial commemoration officially does not start until 2003, Lewis and Clark sites statewide are already hosting increasing numbers of visitors each year. Along with state and local promotional efforts, Montana is also benefiting from national recognition due to potential "Signature Events," keeping the state at the forefront in terms of Lewis and Clark history and contributing to increased travel to the state in 2001.

Improved Access

Montana is also benefiting considerably from improving connections to various airline hub cities. United Airlines recently added 3 daily flights between Bozeman and Denver and has made public its intention to do the same in Missoula. Airport traffic across Montana increased by 4 percent in 2000.

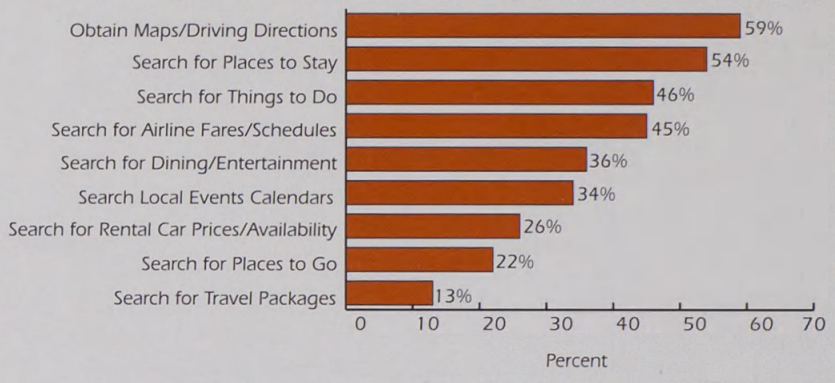
Forest Fires

While Yellowstone National Park experienced record visitation following the 1988 fires, the result of last summer's experience in Montana will be different. Visitors' curiosities are reported to have brought them to Yellowstone in 1989 to view the effects of the previous year's fires. However, this is not likely to occur in Montana due to the patchwork pattern of the burnt areas, as well as their general inaccessibility. Any long-term impact on nonresident visitation is unlikely.

Unfavorable Influences

Of course, there are some factors working against Montana as a travel destination as well, one of them being the still-high gas prices. While these higher prices were not a great influence last year, they may be this year as people have more of a chance to plan their vacations, perhaps choosing to stay closer to home. Another issue that is of increasing concern is the dry winter and spring Montana has experienced so far this

Figure 4
Online Trip-Planning Activities



Source: Travel Industry Association of America.

year. It is possible that visitation will be influenced by low water levels in rivers, lakes and reservoirs, as well as threatened by a replay of last year's fire season.

Information Technology and the Travel Industry

Information technology is already well established in the travel industry. More travelers than overall adults are online, and the rate has more than tripled since 1996, from 27 million online travelers to 90 million in 2000. Online travel planners are those who use the Internet primarily as a planning tool. This use has grown by 38 percent in the past three years (Figure 2). Some 28 percent of U.S. travelers planned trips online in 1997, compared to 66 percent in 2000. Online travel bookings, on the other hand, have grown at a slower rate, up only 15 percent over the same time period (Figure 3). However, this increase is expected to continue as about three-fourths of travel planners who currently do not make online purchases have indicated that they are somewhat or very likely to book travel-related goods and/or services online in the coming year.

While many types of sites are used for planning, consumers tend to stick with specific sites for booking. Planning activity may include viewing company sites, destination sites, online travel agency sites, search engine sites, or portal sites. When it comes to booking, however, company sites and online travel agents are by far the most popular. Of those who use the Internet for planning but not for booking, many choose to make their purchases off-line by phone, testifying to the continued need for live operators and service providers.

To be competitive, travel Web sites must provide opportunities to compare prices and save money. Travelers, like most consumers, are looking for value and like to feel they are getting a good deal when making purchases. A site should also offer up-to-date destination information, and be user-friendly by giving this information in an easily accessible format. Trip planners generally go online to obtain maps or driving directions, as well as to search for places to stay and things to do where they are going. They search for air fares and schedules, while a sizable portion also use the Internet to look for dining and entertainment options at their destinations (Figure 4).

Travel services make up a large portion of products purchased online. Some 40 percent of all wired consumers have purchased airline tickets online, and 16 percent have booked motel rooms this way. Spending on travel-related goods and services has surpassed spending on media (books, music, videos, software, etc.), and is expected to reach $14 billion in 2000, up $2 billion from 1998 and representing 12 percent of total industry revenue. Still, the Internet only accounts for about 5 percent of total travel industry bookings, indicating the tremendous growth potential in this area.❑

Thale Dillon is an economic research associate and Kim McMahon is a research associate at The University of Montana-Missoula Institute for Tourism and Recreation Research.

The IT Sweepstakes

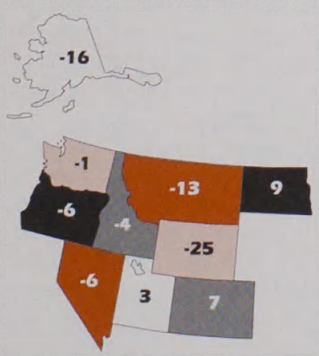
Montana and Other Western States

by Stephen F. Seninger

Some states and regions are experiencing strong economic growth from information technology, advancing into major players within the IT sweepstakes. Other states have been less active. In this article, we look at how regions within Montana compare for IT development, as well as how our state compares to other western states.

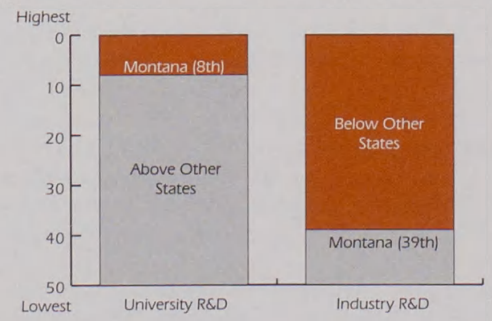
Montana's low per capita income ranking—47th in the nation—is not unusual among western states. Montana's big drop in per capita income rankings over the past 20 years (from 34th in 1980) is mirrored in Wyoming and Alaska, state economies that have been heavily dependent on natural resource industries. Conversely, states like Colorado and Utah—with increased involvement in information technology—have been gainers in national rankings of per capita income (Figure 1).

Figure 1
Change in Rank, Per Capita Personal Income, 1980 - 1999



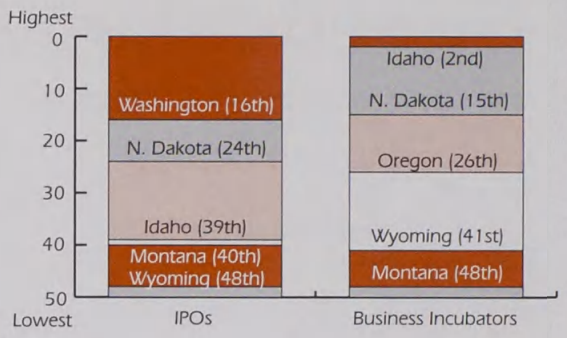
Source: Bureau of Economic Analysis, U.S. Department of Commerce.

Figure 2
State Rankings of Industry-Performed and University-Performed R&D Expenditures, 1997



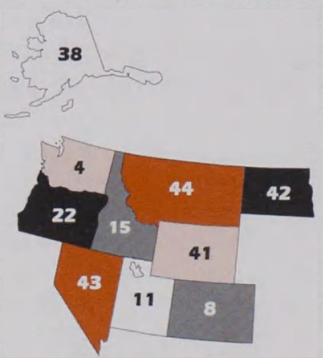
Source: U.S. Department of Commerce.
Note: Rankings based on R&D dollar expenditures per $1,000 of Gross State Product.

Figure 3
State Rankings of IPOs and Business Incubators, 1998



Source: U.S. Department of Commerce.
Note: Rankings based on IPO funds raised per $1,000 Gross State Product. Business incubators per 10,000 business establishments.

Figure 4
Ranking by Percent of Employment in Technology-Intensive Industries, 1996



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

IT Indicators

Direct measures of IT at the state level are hard to come by—there are a number of indicators that reflect the presence of information technology in state and regional economies. These indicators include research and development (R&D) expenditure rates, initial public offerings (IPOs) by start-up companies trying to access finance capital, business incubator activity, and availability of venture capital.

R&D expenditures have a major influence on long-run economic growth, often leading to significant scientific breakthroughs and innovations. When we compare Montana to other states, we find that our state is ranked 39th for private sector, industry-performed R&D. Our ranking is quite different, however, when we look at the R&D performed by Montana's universities in relation to our Gross State Product. Montana's R&D ranking moves up to 8th among all states in the United States (Figure 2). The strength of university-performed R&D is especially important as university-based research institutions are frequently cited as reasons for new businesses to locate in an area.

IPOs are a method for growing companies—particularly in information technology—to raise finance capital for expansion, product development, or acquisitions. Companies that have grown to the stage of having a predictable sales history typically use IPOs. Montana's ranking for the average annual amount of IPO funds raised per $1000 of Gross State Product is low, a pattern also true of Wyoming and Idaho (Figure 3).

Business incubators provide the physical capital facilities for the growth and development of entrepreneurial companies. The presence of business incubators is often a significant location attractor for start-ups. As of 1998, Montana had one incubator, according to the National Association of Business Incubation (Figure 3).

Technology sector companies typically seek venture capital at an early stage in their growth prior to establishing a predictable sales history that qualifies them for more conventional sources of capital financing. In 1998, venture capital companies invested $14.2 billion in U.S. companies. High rates of venture capital financing in a particular state are reflective of business development and growth, especially in high technology. Because of the risks involved with this type of investment, venture capitalists require a higher rate of return and some degree of control in the companies. Venture capital investments serve as a barometer of regional and national economic health as demonstrated through proactive entrepreneurial developments.

Labor force skills, education, and training also influence the location and development of technology firms. Some regions already have a significant number of workers employed in technology-intensive industries like industrial machinery, computers/office equipment, electronics, scientific instruments, computer/data processing, and engineering/research services. The percent of a state's labor force that is employed in technology-intensive industries is a measure of the technical orientation of the business base in the state.

As we look at the rising, strong regional performers such as Idaho and Utah, we see that they have high percentages of the workforce in such industries. In fact, the map of rankings by technology employment (Figure 4) is highly correlated with the map of change in per capita income rankings (Figure 1) over the past two decades. Those states that either moved up or did not decline by much are states with a high percentage of labor force employed in technology-intensive industries. Montana ranks 44th in the nation in terms of percent of workers employed in technology-intensive industries (Figure 4).

Entering the IT Game

Montana, along with neighboring states such as Wyoming and North Dakota, is looking to enter the information technology game. As we look for IT within the state we find the following examples:

• The Billings urban trade center is a major source of scientific and technical service jobs, accounting for 23 percent of all jobs statewide in this industry. One Billings firm, Skyland Technologies, serves as a "fiber hotel" for high-tech industries, offering businesses such as Vision Net and MAIN a place to house sensitive telecommunication equipment.

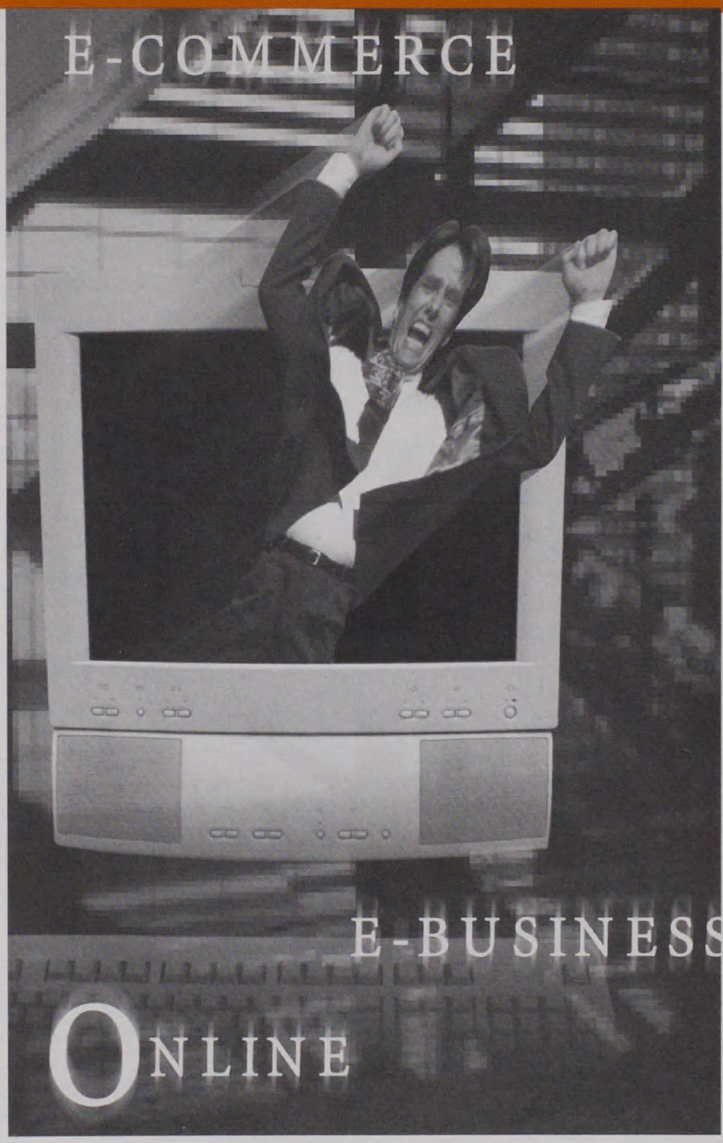
• Missoula has 15 percent of the scientific and technical service jobs in the state. Some e-commerce businesses include **www.Adventure-Life.com**, an organizer of travel adventure tours in South and Central America, and **www.Invizeon.com**, a national medical information service provider to physicians and patients.

• Great Falls accounts for 9 percent of the scientific and technical service jobs in Montana. IT examples include the McLaughlin Research Institute, **www.montana.edu/wwwMRI**, a biomedical research organization aimed primarily at understanding the genetic basis of susceptibility to disease.

• Butte has Advanced Silicon Materials, Inc., and Streaming Solutions, **www.ss-i.com,** out of Cut Bank is expanding some of their operations to Butte; Right Now Technologies, **www.Rightnowtech.com**, a software producer of customer services software for businesses is a major IT presence in Bozeman; Integrated Geoscience in Helena is a provider of geographic information system technology for natural resource management and environmental analysis; and Semitool, **www.semitool.com,** in Flathead County is a good example of IT in manufacturing.

Some rural opportunities for IT include:

• E-commerce for agricultural products is one level of IT development in rural Montana and shows up in agri-food businesses such as custom-beef products in Malta.



• Streaming Solutions in Cut Bank provides full-screen, broadcast-quality video for the Internet.

• Data entry and processing is a second form of IT presence in rural Montana and is locationally driven by the availability of low wage, hard-working labor. Long-run prospects for data entry in rural America are questionable, however, with rising competition from offshore transmission of documents for entering in machine-readable form. Adoption of scanning technology in general may erode the rural advantage in this special segment of IT.❑

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Agricultural Forecast

by Kevin McNew

General Overview

Montana's farm economy, like much of U.S. agriculture, has experienced a downturn in recent years. Low commodity prices since the mid-1990s, coupled with rising input costs and poor weather conditions, have cut into the financial health of Montana's farm economy. Since the peak in 1997, total farm receipts of Montana crop and livestock products have fallen from $2.1 billion to a projected $1.6 billion in 2000. Nearly all of the decline in Montana's farm receipts can be attributed to poor market and growing conditions for crops—especially wheat—which has seen a $400 million drop in farm receipts between 1997 and 2000.

Although crop sales have slumped in recent years, government farm payments have helped to partially offset the decline. In 1997, total government payments to Montana's farmers totaled $230 million. With the lower prices in 1998 and 1999, government payments exceeded $450 million in each year. For 2000, it seems likely that government farm payments will eclipse $500 million, implying that nearly 25 percent of Montana's farm receipts come from government assistance.

Even with relatively bleak economic conditions in recent years, there are indications that Montana's agricultural economy should fare better in coming years. Especially rosy is the outlook for cattle, with prices for feeder cattle approaching record highs at the end of 2000 and a continued uptrend expected for most of 2001. For wheat, market conditions are not quite as robust, but indications of lower U.S. and world wheat production should help strengthen wheat prices slightly in 2001 over the 10-year low posted in 1999.

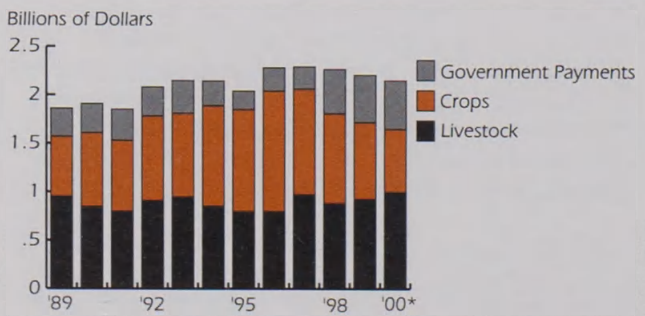
The remainder of this report focuses on the economic conditions and outlook for wheat and cattle, which account for nearly 75 percent of Montana's agricultural receipts.

Wheat Outlook

After reaching a record high in 1995, Montana's wheat price fell 40 percent by 1999, with only a modest recovery expected in 2000. Because wheat is a globally traded commodity, this precipitous drop in wheat prices has been seen worldwide, as global supplies of wheat have outstripped consumption. In the United States, a similar picture can be painted. Domestic supplies have exceeded domestic use and exports by a significant margin, keeping wheat inventories at relatively high levels in recent years.

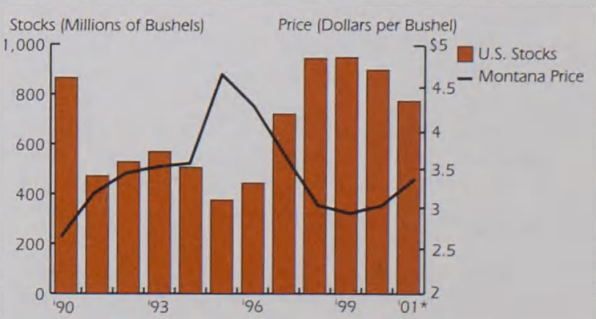
However, low wheat prices around the world have helped cut back production. Since 1996, world wheat production has dropped nearly 5 percent, and current world inventories of wheat are at the lowest levels seen since 1995. In the United States, a similar draw down in stocks has occurred, and it

Figure 1
Montana Farm Cash Receipts for Livestock, Crops, and Government Payments 1989 - 2000



*Estimate
Source: Montana Agricultural Statistics Service, 1989 - 1999.

Figure 2
Montana Wheat Price and U.S. Wheat Ending Stocks 1990 - 2001



*Estimate
Source: Montana Agricultural Statistics Service and USDA-WAOB, 1990 - 2000.

appears that 2001 will see an even deeper cut in wheat inventories. Unfavorable weather through much of the Great Plains in the fall of 2000, combined with poor wheat prices, will likely keep many farmers from planting winter wheat for the 2001 crop year. Although no official estimates are available at this time, many analysts expect a 5 percent drop in winter wheat plantings for 2001 as compared to 2000.

Under normal weather conditions and with a drop in acreage planted to wheat, it seems likely that U.S. wheat ending stocks will fall from their current level of 950 million bushels to 800 million bushels or less for 2001 (Figure 2). This should help strengthen Montana wheat prices by about 10 percent, from $3.00 per bushel in 2000 to around $3.35 for 2001.

As always, growing conditions in the spring and early summer of 2001 will play an important role in determining U.S. wheat production and, therefore, prices. In addition, even though winter wheat acres are expected to be lower for 2001, it is possible that spring wheat acres could increase to partially offset the winter wheat acreage reduction. As such, a great deal of uncertainty still exists regarding the 2001 wheat price situation.

Although there seems to be a strong likelihood of higher wheat prices in the coming year, Montana's grain farmers will also face higher inputs costs. Higher fuel costs and rising fertilizer costs will likely increase farm operating costs by 10 percent from 2000 to 2001. When combined with the outlook for wheat prices, it seems that wheat net-returns will increase only slightly over those seen in 2000.

Cattle Outlook

For much of the 1990s, cattle markets suffered from oversupply and a dwindling demand for red meat from U.S. consumers. Cattle prices remained fairly low through much of the 1990s. However, as cattle supplies began to shrink in the mid-1990s, this helped push cattle prices marginally higher. The biggest boost in cattle prices has come in the past three years as U.S. consumers have begun to expand their consumption of beef—reversing a nearly 20-year slide. After bottoming in 1997 at 67 pounds per-capita, U.S. consumers are projected to consume nearly 70 pounds of beef for the year 2000.

While it is unclear whether U.S. consumers will continue to expand their beef consumption or whether the last few years are just an aberration, it does seem likely that cattle prices will remain strong into 2001 on the heels of short beef supplies. USDA's latest projections call for 2001 beef supplies to be nearly 5 percent below those seen in 2000. As such, prices of slaughter-ready cattle are expected to surge nearly 9 percent between 2000 and 2001 (Figure 3).

For Montana cow-calf ranchers, the outlook for calf prices in 2001 is promising but may not be as optimistic as slaughter cattle prices. Prices for stocker calves and feeder cattle were extremely high in 2000, hovering around $1.00 per hundred weight for the last half of 2000. Although prices for slaughter-weight cattle should strengthen in 2001, it is likely that feeder and stocker cattle prices will remain unchanged or even fall slightly in 2001 as cattle feeding margins begin to return to a more normal level. With higher feeder cattle prices and relatively low slaughter cattle prices in the last half of 2000, many cattle feeding operations have been unable to cover their costs.❑

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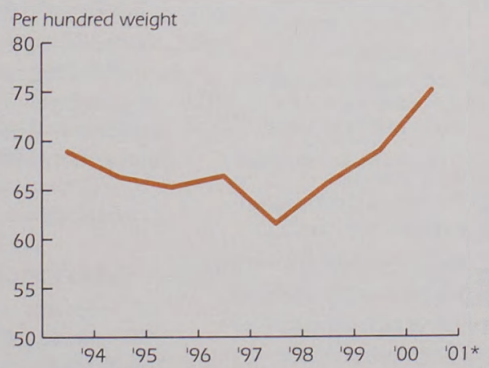
Figure 3
U.S. Cattle Prices
1999 - 2001



*Estimate
Source: USDA-WAOB, 1994 - 2000.

Table 1
Labor Income in Montana's Manufacturing Sectors, 1990 and 2000

	Million 1999 Dollars			
	1990		2000	
Wood, Paper & Furniture	$387	47%	$355	39%
Miscellaneous Manufacturing*	64	8%	91	10%
Machinery, Equip. & Instruments	50	6%	120	13%
Printing & Publishing	70	9%	84	9%
Food and Kindred Products	73	9%	77	8%
Chemicals & Allied Products, Stone, Clay, Glass	63	8%	71	8%
Primary Metals	71	9%	59	6%
Petroleum & Coal Products	45	5%	62	7%
TOTAL	822	100%	919	100%

*Miscellaneous Manufacturing includes mostly light manufacturing, such as sporting goods, musical instruments, games and toys, and jewelry.

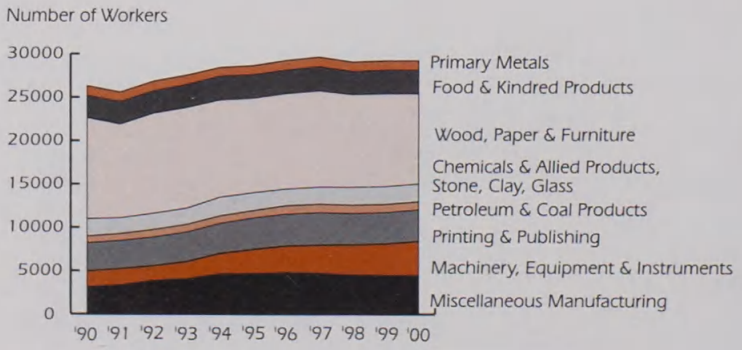
Table 2
Employment in Montana's Manufacturing Sectors, 1990 and 2000

	Number of Workers			
	1990		2000	
Wood, Paper & Furniture	11,652	44%	10,409	36%
Miscellaneous Manufacturing*	3,147	12%	4,517	15%
Machinery, Equip. & Instruments	1,827	7%	3,913	13%
Printing & Publishing	3,220	12%	3,618	12%
Food and Kindred Products	2,546	10%	2,736	9%
Chemicals & Allied Products, Stone, Clay, Glass	2,013	8%	2,049	7%
Primary Metals	1,138	4%	1,080	4%
Petroleum & Coal Products	778	3%	943	3%
TOTAL	26,321	100%	29,265	100%

*Miscellaneous Manufacturing includes mostly light manufacturing, such as sporting goods, musical instruments, games and toys, and jewelry.

Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Figure 1
Montana Manufacturing Employment



Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Manufacturing in Montana

by Charles E. Keegan III, Robert Campbell, and Krista Gebert

Both nationally and in Montana, the manufacturing sector includes traditional heavy industries as well as a broad array of other activities ranging from the production of very complex and sophisticated high technology equipment to cottage industries producing hand-made items like jewelry or sporting goods.

The state's manufacturing sector:

- Produces approximately $5 billion in output annually,
- Directly employs nearly 30,000 workers earning more than $900 million in annual labor income,
- Includes over 2,000 entities such as factories and plants, logging companies, and at-home cottage industries.
- Pays high wages, with labor income per employee averaging about $30,000 per year, as opposed to an average of about $23,000 per year for all Montana workers.
- Accounts for 20-25 percent of Montana's economic base.

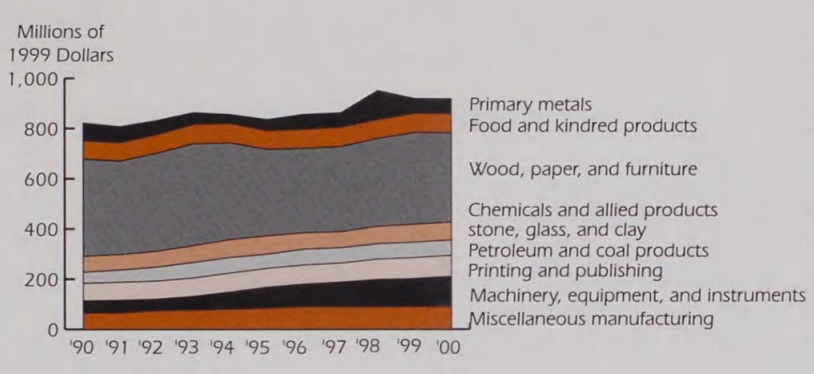
Trends in the Last Decade

In contrast to the national trend of decreasing manufacturing employment, Montana's manufacturing employment and labor income have increased over the past decade by about 11 percent. Not all of the sectors have followed this trend, though (Tables 1 and 2). For example, the machinery, equipment, and instruments sector has doubled in size, increasing its share of manufacturing employment and labor income. However, the wood, paper, and furniture products sector—the largest sector—has dropped from 47 percent of manufacturing labor income and 44 percent of manufacturing employment in 1990 to 39 percent of labor income and 36 percent of employment in 2000.

Market Conditions

Market conditions facing Montana's manufacturing industries were quite mixed in 2000. For many firms, in particular the machinery, equipment, and instruments sector, the continued strength of the U.S. economy meant stable or

Figure 2
Labor Income in Montana Manufacturing Industries, 1990-2000



Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

increased sales, profits, and employment. For others, however, the economic picture was much more bleak. Faced with the lowest inflation-adjusted lumber prices in a decade (see Figure 1, page 34), high energy costs, and increased timber availability problems due to the 2000 wildfires, the forest products industry experienced decreases in production, and subsequently, employment, and labor income. For manufacturing firms heavily dependent on electricity, the extreme increases in electricity rates raised input costs and decreased profits, resulting in some temporary shutdowns and curtailments.

Estimated sales value of all manufactured products in Montana, employment, and labor income remained stable from 1999 to 2000, with losses in the wood and paper products industry being offset by gains in machinery, equipment, and instruments (Figures 1 and 2).

Outlook and Major Concerns for 2001

Market conditions for 2001 are uncertain. The U.S. economy is expected to be weak in 2001, but a recession is not expected. Although many firms have indicated major capital expenditures in 2001, we do not expect manufacturing activity to increase due to the slowdown in the U.S. economy and other factors more specific to Montana's economy. Manufacturing firms view the following factors as major concerns in the next year:

- skyrocketing energy costs,
- a shortage of available timber, and
- a lack of laborers, especially skilled labor, and rising labor costs.

Primarily due to increased energy costs and weaker markets, we expect a decline in manufacturing employment of about 1,000 workers in the first half of 2001. We expect some increase in employment in the second half of the year.❑

Table 3
Manufacturing Labor Income Among Montana Counties, 1998

	1998 Manufacturing Labor Income (Millions of 1999 Dollars)	Percent of State's Manufacturing Labor Income
Flathead	227	23%
Yellowstone	146	15%
Missoula	138	14%
Gallatin	93	10%
Lincoln	45	5%
Cascade	42	4%
Ravalli	40	4%
Lewis & Clark	38	4%
Lake	30	3%
Silver Bow	27	3%
Park	14	1%
Powell	13	1%
Richland	12	1%
Stillwater	10	1%
Broadwater	10	1%
Remaining 41 Counties	79	8%
State Total	964	100%

Note: Labor Income in 1998 includes a one-time $65 million dollar payment to Columbia Falls Aluminum Co. workers affecting values for Flathead and adjacent counties.

Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Charles E. Keegan III is director of forest industry research at The University of Montana-Missoula Bureau of Business and Economic Research. Krista Gebert is the Bureau's manufacturing research project coordinator. Robert Campbell is the director of Montana Business Connections.

Montana's Forest Products Industry

by Charles E. Keegan III, Steven R. Shook, Krista Gebert, Francis G. Wagner

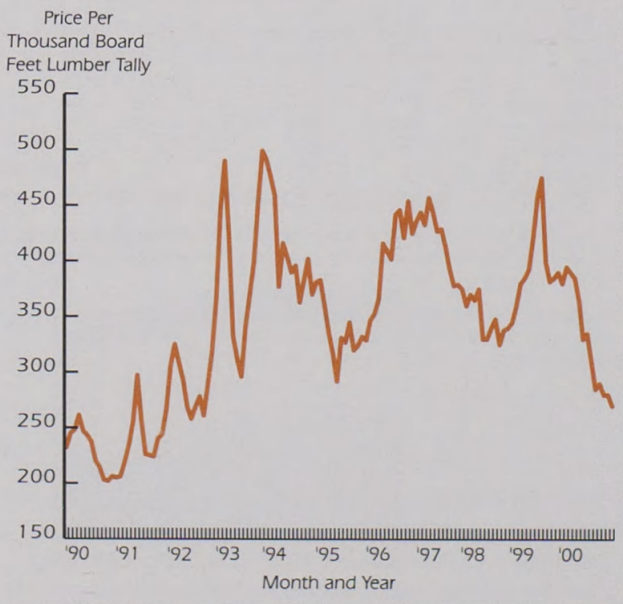
Operating Conditions

After relatively high prices during the first two months of 2000, lumber prices fell sharply in mid-March and remained low for the rest of the year (Figure 1). Declining prices were due to a combination of factors, including:

- High production brought on by increased worldwide milling capacity and unfulfilled strong market expectations at the start of the year. Lumber inventories rose, and prices fell.
- Higher interest rates and a weaker U.S. economy.
- A strong U.S. dollar.

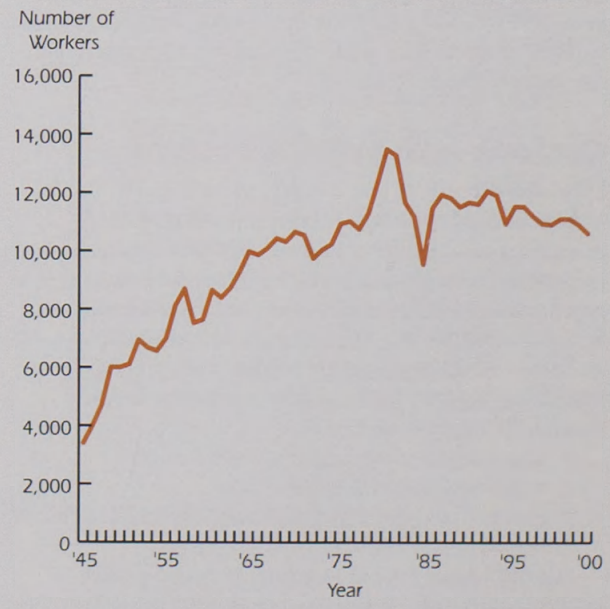
In addition to a weaker market situation, Montana's forest products industry—already struggling with limited timber availability —was hit with the summer's wildfires and increases in electricity rates. Wildfires caused forest closures for much of the summer, forcing some mills to temporarily cut back production in an effort to stretch log yard inventories. The closures also forced loggers out of the woods for much of the third quarter—normally one of their busiest seasons—although some did find work in firefighting activities. Furthermore, unprecedented increases in electricity rates for mills that purchase their electricity on the spot market led to additional curtailments in production at Smurfit-Stone Container Corporation in Frenchtown and the Louisiana Pacific particleboard plant in Missoula.

Figure 1
Nationwide Composite Lumber Prices Monthly, 1990-2000



Source: Random Lengths Publications.

Figure 2
Montana Forest Industry Employment, 1945-2000



Source: Bureau of Economic Analysis, U.S. Department of Commerce; Bureau of Business and Economic Research, The University of Montana-Missoula.

Figure 3
Montana Lumber and Plywood Production, 1945-2000

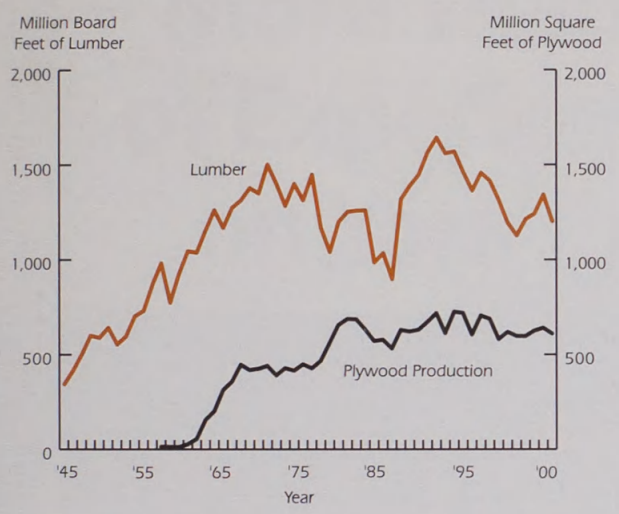
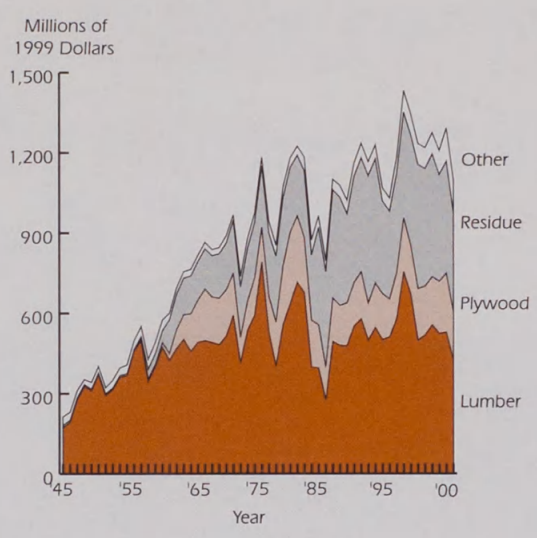


Figure 4
Sales Value of Montana's Wood and Paper Products, 1945-2000



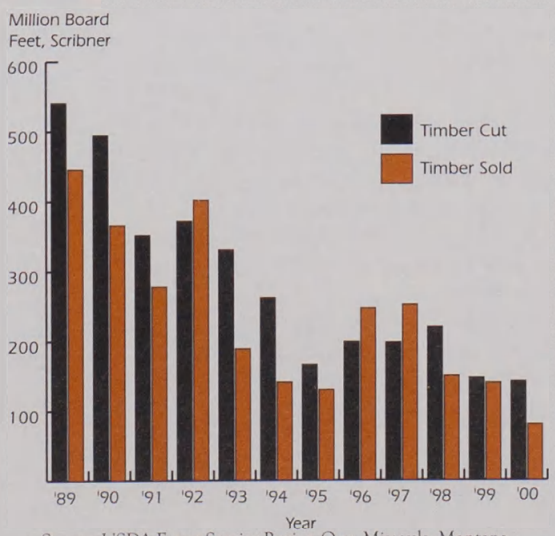
Source: American Plywood Association; Bureau of Business and Economic Research, The University of Montana-Missoula; Western Wood Products Association.

Sales, Employment, and Production

Total sales value of Montana's primary wood and paper products in 2000 was about $1.1 billion—down about 15 percent from $1.3 billion in 1999. Estimated forest industry employment was 10,600—a decrease of 300 workers from 1999 (Figure 2). Temporary curtailments contributed to the employment declines, as did the permanent closure in July of the American Timber Co. sawmill in Olney.

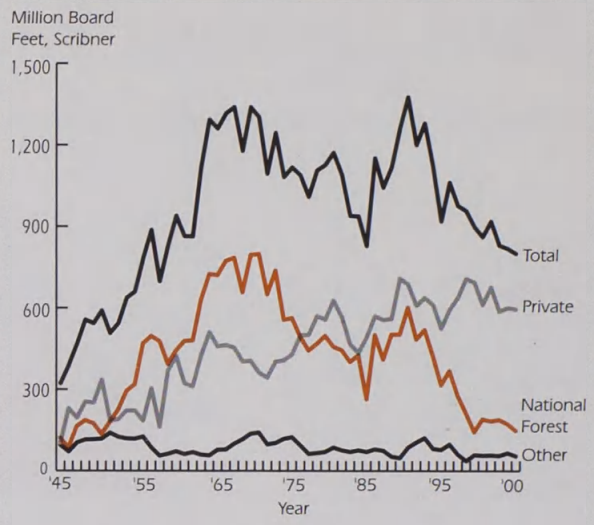
Montana's lumber production was just over 1.20 billion board feet in 2000, down 10 percent from 1.34 billion board feet in 1999 (Figure 3). Plywood production also decreased, falling 9 percent from 640 million square feet in 1999 to about 580 million square feet in 2000. Although production for many other wood products manufacturers, such as millwork, was also down in 2000, not all components of the wood-using industry saw declines. The log home industry and some secondary manufacturing sectors saw production, sales, and employment increase or stay roughly the same in 2000. Wood furniture manufacturers, which are not generally included in the forest products industry figures, saw an increase in production and employment.

Figure 5
Montana National Forest Timber Cut and Sold Volumes, 1989-2000



Source: USDA Forest Service Region One, Missoula, Montana.

Figure 6
Montana Timber Harvested by Ownership, 1945-2000



Source: Bureau of Business and Economic Research, The University of Montana-Missoula; USDA Forest Service Region One, Missoula, Montana.

Outlook

There is unlikely to be a dramatic rebound in markets in 2001 unless U.S. and international economic conditions improve substantially. The expiration in 2001 of the Canadian-U.S. Softwood Lumber Agreement, which regulates lumber importation, may increase domestic lumber supply in the near term and place downward pressure on softwood lumber prices.

Should market conditions improve, Montana mills still face uncertainty over timber availability—the major long-term concern expressed by the industry, according to a recent Bureau survey of Montana's largest manufacturers. In the near future, salvaged timber from burned areas could produce relief by both increasing the volume available and lowering stumpage and log costs. Longer term, the wildfires have reduced the growing stock of timber, potentially leading to lower growth rates. However, it is possible that aggressive forest restoration programs to reduce the risk of future catastrophic fires could lead to a longer-term increase in available timber.

Besides timber availability and low product prices, the other major concern of the industry is energy costs. Electricity rates are high and threatening to go higher as demand continues to increase. Natural gas prices are expected to climb, and transportation and logging costs have been driven up by the high price of oil.

Higher operating costs, coupled with low lumber prices, are a dangerous mix. It is unlikely that either situation will be rectified in the near future, meaning that production and employment levels in Montana's forest products industry will probably decline further in 2001. A number of mills have announced curtailments due to markets and high electricity rates. Smurfit-Stone, the only pulp and paper mill and the state's largest wood using facililty, has temporarily curtailed 50 percent of its capacity.❑

Charles E. Keegan is director of forest industry research at The University of Montana-Missoula Bureau of Business and Economic Research. Steven R. Shook is assistant professor of forest products marketing at the University of Idaho, Moscow. Krista Gebert is the Bureau's manufacturing research project coordinator. Francis G. Wagner is professor of forest products at the University of Idaho. The annual analysis of Montana's forest products industry is part of an ongoing cooperative research project among the three institutions.

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